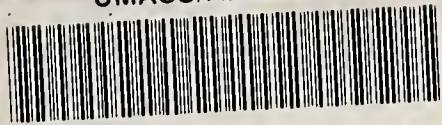


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Annual Report Division of Forests and Parks Fiscal Year 1987

ANNUAL REPORTS

DIRECTOR'S REPORT

GILBERT A. BLISS,
DIRECTOR OF FORESTS & PARKS

OLIVER PEIRCE,
ASSISTANT TO THE DIRECTOR

BUREAU OF RECREATION

CHARLES H. DANE, CHIEF

BUREAU OF FOREST DEVELOPMENT

THOMAS F. QUINK, CHIEF

BUREAU OF SHADE TREE MANAGEMENT & PEST CONTROL

CHARLES S. HOOD, CHIEF

BUREAU OF FIRE CONTROL

ANTONIO CASTRO, CHIEF

BUREAU OF URBAN SERVICES

ROBERT FREEDMAN, CHIEF

BUREAU OF INTERPRETIVE SERVICES

ELLEN K. ROTHMAN, CHIEF

FISCAL AFFAIRS OFFICE

KENAN FOLEY
FISCAL AFFAIRS OFFICE

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

DIVISION OF FORESTS AND PARKS

ANNUAL REPORT

GILBERT A. BLISS, DIRECTOR OF FORESTS & PARKS

The past year has seen a number of particularly significant events take place. In the personnel area the following are noted:

Charles (Stan) Hood retired at the end of June, culminating over 28 years as Chief of the Bureau of Shade Tree Management and Pest Control. The Bureau report contained in this report was Stan's last official act although I am sure his vast technical knowledge and expertise will be tapped by state, local, and private interests in his retirement years.

Alden (Slim) Cousins, the Regional Forest & Park Supervisor in Region I, retired after 31 years of service beginning and ending in this Division, but also involving distinguished service in Wetlands Regulation, and Solid Waste Management. Todd Lafleur, formerly Assistant Chief of Urban Services, was selected to take over supervision of Region 1.

Andrea Lukens left the Bureau of Interpretive Services in August of 1986 to attend graduate school at Yale University. Andrea's energy, professional skills and shining personality helped to advance the interpretive program in her years with us. In April of 1987, Ellen Rothman was selected to lead the Bureau. Ellen comes to us with a rich background in cultural interpretation and history and will provide balance to enable a more complete interpretive program in the future.

A retirement dinner was held for Manuel Correllus who served as a Forest & Park Supervisor, at Martha's Vineyard State Forest for over 50 years, on May 5. As a very appropriate companion piece to the retirement festivities, Governor Dukakis signed into law, on that date, Chapter 41 of the Acts of 1987 which renamed the state forest on Martha's Vineyard, the Manuel Correllus State Forest.

MANAGEMENT WORKSHOPS FOR SUPERVISORS

On March 20th, the first Recreation Supervisors conference was held at Quinsigamond Community College. Attended by over 150 employees, it was the initial effort in what we hope will be an ongoing series of semi-annual training workshops for supervisors.

The workshops consisted of seminars on four topics chosen by a committee of recreation supervisors and managers. These topics were: fiscal management, employee liability, the "three headed monster" (rural parks, urban heritage parks, rinks and pools), and problem identification. The supervisors were split into three groups, and each topic was presented three times during the day.

"Fiscal management" was a presentation by Bob Freedman and Ken Foley on how to think about and prepare a budget for a recreation facility. Supervisors left these sessions with an outline they will put to use in fiscal 88.

"Liability" consisted of a panel of attorneys discussing the current state of the law on employee liability for events occurring at state facilities.

"Three Heads" was an attempt to show how the various recreation program components of the Division relate to each other, and to the new Interpretive Services component.

The last topic allowed the supervisors to identify areas of common concern and present them to the Commissioner and the Director for response.

Reaction from the Supervisors was quite positive, and the Division intends to follow up with comparable or expanded workshops semi-annually. We see these employee conferences as an important part of expanding training opportunities for our supervisors; training which is increasingly recognized as necessary for upgrading and professionalizing the park service.

PARK STAFFING MODEL

This past year the Division published a management study to identify and weigh the various aspects of park maintenance and management. The idea was to quantify park work and rationalize staffing patterns and budget requests. The resulting study, "A Method of Weighing and Comparing Levels of Responsibility in the Massachusetts State Forests and Parks," helped establish some standards for staffing and supervisory levels at our parks which are tied to various physical, program and usage factors at each area.

The data and proportional weights used for categories within the model are based on a survey of park supervisors for both data and park crew work time. We wanted to know both what they were doing, and what they had to postpone doing. The categories were then weighed to roughly correspond to the average amount of time which is spent in dealing with them, leaving a margin to account for the leftover workload.

While no one claims that this type of model is an exact representation of reality, it does give us a way of comparing parks and regions based on many factors. It also serves as a compact data base for the park system, and a method of requesting and assigning personnel. The model is designed to be updated annually to reflect changes in acquisition, usage, programs and available facilities.

The most important assumptions built into the model revolve around our recognition that we are responsible for protecting and maintaining the natural resource itself as well as providing recreational programs and facilities; and that to do both types of work, we must have year round minimum staffing for areas open to the public.

This first version of the park model, based on fiscal 1986 data, generated a staffing pattern which would involve a nearly fifty percent increase in year round laborer positions, and substantial increases in supervisory position levels.

FISCAL DECENTRALIZATION

Because of changes begun during this past year, we are rapidly approaching the day when Regional Supervisors can say to facilities supervisors, "This is the amount of money you will have to run your park next year. How do you propose to use it?" This new responsibility, combined with the knowledge that 35% of all revenues go directly into our budgets, should provide a real incentive for field personnel to collect fees, as well as plan efficiently for their expenditure.

During the past fiscal year, the Division implemented the initial phase of its plan to decentralize the fiscal management of our resources to the regional and facility level. As part of an overall strategy to maximize the utilization of limited fiscal responsibility at the regional management and facility supervisor levels.

The implementation of our first year of Retained Revenue made it possible to work from a spending plan which could allocate funds to the Regions for certain subsidiaries (09 & 12). The 15 equipment subsidiary was also funded from retained revenues, but vehicles and heavy equipment must be ordered and purchased centrally to achieve any economies of scale. The normally appropriated 06 and 07 accounts were also apportioned to the Regions. We plan to include the 01 & 02 subsidiaries next year.

There were initial difficulties to overcome, as the new spending plan overlapped implementation of the MMARS accounting system, effectively blocking efficient use of this first year money by greatly compressing the time frame from which it could actually be spent. The start up problems with MMARS led to sufficient unspent revenues at the end of the fiscal year to attract the attention of the Budget Bureau, ever disposed to convert "retained" revenue into "returned" revenue. Their efforts to derail the carryover aspect of this funding may yet shortchange us on our first year's due, but we look forward to a good revenue year in fiscal 1988 without the handicap of MMARS difficulties.

During the current year we intend to extend the budgeting process to the facilities level in the Bureaus of Recreation and Urban Services. Supervisors will be working on budgets and implementing their own spending plans. They will have to adjust their plans to the amounts which emerge from the other end of the long and tedious budget process, but they will be part of it.

ANNUAL REPORT

FISCAL YEAR 1987

BUREAU OF RECREATION

CHARLES H. DANE, CHIEF

In Fiscal Year 1987 the Division of Forests and Parks welcomed over 12,239,770 visitors to the park system, acquired 955.5 acres of land and operated on an annual budget of \$18,720,293.00.

Included in this year's many accomplishments is a concerned effort to offer recreation facility supervisors with opportunities to improve and learn management and maintenance skills; increase public awareness of the park system and natural resources through recreational programs and advertising; and increase the highway and street signage to better guide visitors to their destinations.

As steward of one of the nation's largest state forest and park systems, the Division of Forests and Parks will continue address, assess, and plan for the recreation needs of Massachusetts residents and visitors as it is challenged by the Commonwealth's rapid development and increased population.

SHARED REVENUE

The inception of the revenue retention program has dramatically improved the operation of the Bureau of Recreation. Funding for subsidiaries in Grounds, Maintenance, and Equipment are more readily available for distribution to field operations rendering them more efficient. Park grounds are visibly improved offering pleasing aesthetics to the visitor. Maintenance and repair of equipment along with more rapid replacement ability enhance the operation of older facilities. At the same time purchase of new equipment has taken place enabling willing field personnel to be more productive and boosting moral to a level sought by the Division of Forests and Parks, Bureau of Recreation.

It is important to note that in addition to subsidiary funding, many Departmental needs are now being satisfied. Programs have been established through this source of funding providing for standardization of park uniforms, mounted Police units, Public Information and Education through Interpretation. Appropriately, items such as exhibits, signage, safety, park promotion and recreation transportation links have also been addressed. A very important component of spending deserving of recognition is Special needs programming for the Handicapped. The Department continues its efforts to provide access to our facilities by the handicapped through provision of equipment in picnic and camping areas.

SIGNAGE

Highway Lead In

As a beginning and in cooperation the with the Department of Public Works some 50 Tourist Oriented Directional highway signs (60 x 16") are in place throughout the Commonwealth. These signs along with 64 site Specific (36 x 48) signs guide the visitor to our park system. To further assist 395 Generic Type (ie State Park) (24 x 30) have been erected on Rural Roads and Secondary Roadways. This signage has offered the public easy access in unfamiliar areas to Massachusetts Recreation areas.

Trail Designation Initiative

Once a visitor arrives at a recreational facility they may find one of our newly marked activity trails. Some forty three thousand trail marking pieces have been distributed throughout the state to assist recreation areas in designating, upgrading, and providing the trails opportunity to our visitors.

In the upcoming months Advisory and Friends Committee organizations and volunteer will continue their efforts in cooperation with field supervisory personnel to achieve Departmental goals in their trails initiative.

LIFEGUARD RECRUITING PROGRAM

Lifeguard recruitment took place in all areas of the Commonwealth with specific attention paid to areas traditionally in need of this service. Posters were placed in high schools, colleges and local athletic areas where swimming is part of the program. In addition, Red Cross Chapters across the state were notified of our need for the upcoming recreation season.

Training sessions were made available through the Red Cross to enable potential candidates to secure all the necessary certificates to comply with the State laws.

As a result of this intensive recruitment program, there was not a shortage of lifeguards as had been predicted.

RINK & POOL PROGRAM

Fiscal 1986-1987 once again showed the Rink and Pool Program to be a growing, viable form of recreation within the Commonwealth. The demand for ice time increases each year, as do the programs offered at DEM rinks.

One of the most encouraging aspects of the rink program is taking place at North Adams. Renewed enthusiasm by long time renters, coupled with a new "learn to skate" program, has increased ice usage during 1986-1987 between 5 to 10 hours per week. In addition, close cooperation between North Adams Heritage State Park and the Rink have fostered new programs such as the Polar Bear Skate. North Adams Rink was also host to activities of the Bay State Games.

The Connecticut River Valley Rinks continued to shine with sound programming and excellent maintenance practices. Region 4 Rinks are a model of consistency in operation. In addition to their ice rental season, numerous off season activities were held during the 86-87 season, demonstrating the flexibility of our Rink program.

Worcester County Hockey interests appear to have settled down from the roller coaster ride they had taken over the past 15 years. Demand for ice time is strong, along with increased public skating usage. The Gardner Street Hockey program continues to be an early summer, non ice related function increasing usage and income for these facilities.

The Northeast Region rinks continue to feel the strain of tremendous ice time demand. There appears to be two or three renters for each hour of prime ice time available. This demand carries over into the summer ice programs. This additional usage creates a strain on staffing throughout the region.

The Southeast rinks in Region 1 are also very busy, with the Franklin Rink, once again, logging the most hours rented, and the highest income of the department's 18 rinks. Summer rental programs at the Franklin and New Bedford rinks illustrate the strong skating interests in this region. Non ice related activities also highlight the summers of Region 1 Rinks.

Each time a drowning takes place and it is learned that the victim was a non-swimmer, we are reminded that the "learn to swim" programs offered at our 19 swimming pools are of inestimable value to the public. The fact that our pools are located in urban areas where many of the users are not exposed to the more traditional rural swimming areas, makes DEM's pool program an integral part of recreation for many cities and towns across the Commonwealth. Once again, DEM provided its pools with new, state of the art water testing equipment, allowing our trained managers to maintain high standards of water quality.

The Zamboni Maintenance program continued to keep these tempermental machines operating through the 86-87 season. DEM's newest Zamboni is 15 years old, and yet, all these machines continues to perform admirably under the maintenance program administered by our people. A work shop was constructed at the Westboro Warehouse where engines are rebuilt and numerous other repair functions take place to allow for immediate replacement of broken parts.

In addition to all the programs and responsibilities at each rink, it should be noted that in 1986-87 rink personnel were called upon to work in State Forests and Parks, Urban Heritage Parks, Regional Offices, the Boston Offices and even perform law enforcement duties for the Department. As in years past, the rink and pool program in 1986-1987 once again came to the forefront as an integral part of the operation of the Department of Environmental Management.

FORESTS & PARKS RANGER PROGRAM

The Goals of the Forests and Parks Ranger Program for FY 1987-88 were to improve the level of service to both the Department and the Public, and to increase the number of activities the program participated in.

In September of 1987, 3 park rangers attended the National Mounted Police Training School in New York. This 48 hour course provided instruction in crowd control, formation riding, street sense, horse sensitivity, mounted arrest and numerous other aspects of mounted police work. Upon graduation, the three rangers were declared certified mounted officers, thus reducing liability to the agency.

As a result of the school and lessons learned there, the program actively sought to improve its mounts. Numerous horses were tested and two were selected which have greatly improved our abilities.

The number of requests for the mounted unit during the fiscal year increased dramatically. Crowd control during the Blackstone Valley Heritage Homecoming was a staunch test for the unit which included traffic control, crowd control for fireworks, and escorting the Governor. Dirt bike patrols at Myles Standish State Park proved very successful, and we hope to be able continue them. Traffic control on Mt. Wachusett, numerous parades and pageants, all added to the activities of the unit, along with the routine patrols continued from the previous year.

One of the highlights of the year was an introductory training course held at Upton State Forest for four new recruits to the program. The Rangers were instructed in equestrian skills and mounted police skills, necessary to perform these duties. The rangers responded to this training with enthusiasm and courage and are now available on a limited basis to perform patrols utilizing their new skills.

SEARCH AND RESCUE

In mid March of 1987, seven members of the Department of Environmental Management attended a four day training session sponsored by the National Search and Rescue Association. This instruction certified these employees as search managers, capable of organizing and conducting searches utilizing the appropriate skilled people at appropriate places and times.

The tasks set forth for these search managers is threefold. The first, and most obvious duty is to act as search managers whenever someone gets lost on one of our properties. This includes the initial search utilizing hasty teams as well as coordinating the more complex grid searches.

The second task is to establish policies relating to the search function with respect to the Department of Environmental Management. These policies would include what to do when a person is reported missing, what information to gather and who to notify.

The third task is to conduct training sessions for department employees on how to react to a lost person notification. Often, the initial reaction by the area supervisor can keep a search to a minimum by closing off the area, gathering necessary information, and preserving the point last seen.

The search program is another exciting example of the department's eagerness to properly manage its facilities and provide the highest degree of professionalism in serving the public.

LYME DISEASE PILOT PROJECT

With concern for the spread of Lyme Disease, the Bureau of Recreation undertook a pilot project to determine infection potential at our facilities.

Under a Service agreement with EcoHealth Inc. of Boston, tests were done at Scusset Beach and Shawme Crowell State Park on Cape Cod. The tests showed that the beach area did in fact have Ixodes Dammini (Lyme Disease Transmitting Ticks), while Shawme Crowell indicated an acceptable level of density.

The Bureau provided for the training of personnel in the collection of these ticks. The ensuing laboratory analysis, dissection and testing provided information necessary to ascertain measures to be taken.

Purchase of Damminix cylindrical Tubes, with open ends filled with cotton and treated with a contaminate injurious only to ticks, only were used for experimental treatment and elimination. Resampling and testing is planned for spring of 1988. Assessment of the program and the impact of treatment will be assessed. At that time a decision will be made as to other areas where testing may be of value.

ADOPT-A-TRAIL PROGRAM

Over 15 forest and park supervisors completed a training session conducted by the Appalachian Trail officers. This training provided the supervisors with the skills to instruct volunteers in trail main- and small construction projects. In FY 87 the program attracted approximately 200 volunteers from all sections of the state and will take place at 23 forest and park facilities.

CELEBRATE MASSACHUSETTS FORESTS AND PARKS

The second annual Celebrate Massachusetts Forests and Parks campaign was a great success. Celebrations were held at five locations across that state and attracted a record number of visitors. This campaign has become an annual event designed to increase public awareness of our vast and diverse park system.

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RECREATION SUPERVISORS CONFERENCE

Held in March and October of 1987, the Recreation Supervisors Conferences were the first of their kind organized to provide supervisors with additional training, skills and information sharing. The conferences are organized by a team of Division employees representative of all aspects of recreation. This training, which included a variety of subjects, fosters the professional growth of the supervisor who will be better able to care for their assigned facilities, and serve the public. Approximately 150 supervisors attended each conference.

TRAIL MAPS

In accord with the newly revised graphic standards, the Bureau of Recreation has produced new trail maps for 14 facilities. The maps are made with various styles of tapes which allows for corrections to be made easily. Topographical lines complement the map that provides detailed information for trail users.

PROMOTIONAL EQUIPMENT

Portable lecterns and advanced cameras and equipment have been purchased for each regional office in order to better facilitate public meetings and events.

KEEP WALKING PROGRAM

In cooperation with the Executive Office of Elder Affairs, the bureau initiated the "Keep Walking Program." Open to men and women who are 55 years or older, the program began with a spring rally in each of the eight forest and park facilities chosen.

Trail markers were installed indentifying the trail milage for those who need to record their distances. Markers were kept up throughout the summer so that participants could return for their work out.

"EXPERIMENT WITH TRAVEL"

A non-profit organization whose labor force is made up of under privileged youths entered into an agreement in the amount of \$13,800 with the DEM for trail development and improvement work at the Holyoke Range State Park, Erving State Forest, and Mt. Watatic. Work on all projects is expected to be completed by October of 1987.

EXHIBITS

For the first time DEM has designed an exhibit for the National Parks Visitor's Center on State Street in Boston. This is a great opportunity as the center welcomes over 1,000 of visitors each day during the summer months. The current exhibit depicts a variety of scenes from the entire park system. We will begin to discuss a more professional and permanent exhibit later in the year.

CAPITAL OUTLAY BOND FOR RINKS AND POOLS

The \$1.1 million 1987 Rinks and Pools Repair and Rehabilitation fund has been targeted to include: public and Staff safety; building stabilization; facility security; problems that jeopordize normal operations; and preparation for future programs.

A half million dollar roof study, repair/replacement program has been undertaken with DCPO. Repair/replacement studies have been completed for the Brockton, Worcester, Springfield, Lowell, and Greenfield skating rinks.

The Brockton roof will be replaced with 1987 funds and the other roofs will be either repaired or replaced with the money from the FY 88 operational budget.

The faulty electrical system at the Auburn Rink has been replaced by DEM regional staff.

The condensor tower at the Marlboro Skating Rink, the filter motor at the Holyoke Pool, and extensive slab repair work at the New Bedford Skating Rink have been completed.

Joe Prenda has done substantial research into pool liners for the renovation of DEM's six marcite coated pools. A statewide filter renovation program is scheduled to be initiated at the Bennett Field Pool in Worcester.

DCPO building studies for the replacement of six pool bath-houses are being programmed.

ANNUAL REPORT

FISCAL YEAR 1987

BUREAU OF FOREST DEVELOPMENT

THOMAS F. QUINK, CHIEF FORESTER

INTRODUCTION

The Generic Environmental Impact Report, mandated by the M.E.P.A. Office in the Executive Office of Environmental Affairs, spurred a flurry of cooperative activities among the various interests of the Commonwealth's "forestry community". Proposed non-point logging thresholds that address clean drinking water were perceived to be unrealistic and unworkable. The forest community, with leadership from Director Gilbert Bliss, agreed, after packed public hearings conducted by M.E.P.A., to initiate a review of harvesting activities and their impacts on public water supplies. A Technical Advisory Committee was formed with several working sub-committee. The project is a major focus for FY'87 and '88. Results will have far-reaching effects on the harvesting of forest products on public and private lands in the Commonwealth. The solidarity exhibited by forestry interests should lead to workable conclusions.

PERSONNEL

The retirement of Paul Hannon, Mid-State Management Forester and long-time career employee, triggered the chain reaction for several personnel moves during FY'87.

Charles Perna, Central Worcester Service Forester, transferred laterally to fill the position vacancy left by Hannon. Michael Fleming moved laterally from the Northern Berkshire Management Forester position to the Central Worcester position.

Also, Joseph Dombrow, Assistant Mid-State Management Forester was promoted to Senior Forest and Park Supervisor at Mt. Wachusett Reservation. Richard Valcourt was selected to become Chuck Perna's Forestry Assistant.

David Robb, RC&D Forester was chosen to the Northern Berkshire Management Forester position and Douglas Leab, Assistant Forester for the Central Berkshire Management District was promoted to RC&D Forester. With that appointment, the RC&D Forester's office was moved from the Region #5 Headquarters to the Berkshire-Pioneer RC&D Area Office in Hadley.

Chief Forester, Thomas Quink, was awarded a Commonwealth Citation for outstanding performance as a state employee under the "Pride in Performance" program. He was one of six DEM employees to receive the award.

At the University of Massachusetts' Dept of Forestry and Wildlife Management, two appointments were made that strengthened the Bureau's programs. Dr. David Kittredge was appointed Assistant Professor of Extension Forestry. This long-time-vacant position was needed to backstop the Bureau's Service Forestry Program. Chief Forester Quink served on the Extension Search Committee. Also, Dr. Gretchen Smith, Forest Pathologist was hired by the same U.Mass. department to spearhead DEM's Cooperative Acid Deposition

Research Program. Gretchen comes to us with a wealth of experience in dealing with the atmospheric deposition problems in New Jersey's pine barrens.

PRIVATE LAND MANAGEMENT

SERVICE FORESTRY OVERVIEW

Besides administering the Forest Taxation Law (M.G.L. Chapter 61) for privately-owned forestland, Bureau service foresters approve and inspect timber harvesting operations, as governed by the Forest Cutting Practices Act (M.G.L. Chapter 132, s. 40-46). Additional projects include administering the American Forest Council's Tree Farm program at the state level; assisting Christmas tree growers; conducting workshops for loggers, landowners, consulting foresters and municipal officials; and attending conferences, workshops and meetings relevant to forestry issues.

FOREST TAX LAW/FARMLAND ASSESSMENT

FY1987 continued to show a decrease in the number of new applications for Chapter 61 classification as well as a decrease in renewals.

During FY1987, 141 new applications/management plans containing a total of 9,937 acres were processed into the Chapter 61 program. This represents a 19% decrease in the number of plans submitted for classification from that of the previous year. A total of 204 management plans comprising 19,154 acres were processed for recertification, representing a 39% decrease in renewals from that of the previous year. This may be

partially attributed to 1986-87 having been the final grace year for previous 5-year management plans. Region IV (Connecticut Valley Counties) continued to have the most forestland classified under the program.

Several amendments were added to M.G.L. Chapter 61 in FY1987. The first amendment increased the time limit that the cities or towns have to exercise their first refusal option for land use conversion from 60 days to 120 days. The second amendment changed the wording of Section 8 concerning betterment assessments for water pipes that supply fire protection for forest land.

The new Chapter 61 regional computer record-keeping project has been completed. This allows a Regional Office to have updated information available for each Chapter 61 property. Also, this information can be transmitted directly to the Boston Office so that statewide Chapter 61 statistics can be compiled.

The new ASCS special practice, SP-44, was implemented during FY1987. This practice provides cost-sharing to landowners for the creation of Chapter 61 Forest Management Plans. Statewide, a total of 26 SP-44 plans were filed incorporating 5648 acres.

The redesigned Chapter 61 Forest Management Plans, along with new directions for preparation, were put into use in FY1987. These new plans are easier for the consulting foresters to fill out and provide more useful information for both the service forester and the landowner.

FOREST CUTTING PRACTICES LAW

FY1987 experienced a decline in the amount of forest harvesting in the state. The reasons for this decline include low prices for conventional home heating fuels decreasing the demand for fuelwood, a dramatic increase in the amount of development throughout the state prompting many logging firms to switch to land-clearing, a heavy winter snow cover and a wet spring hampering access to woodlots, and a generally healthy economy which tends to dissuade landowners from selling timber.

Forest Cutting Plans filed under the Forest Cutting Practices Law (M.G.L. Chapter 132, s. 40-46) decreased from 816 in FY86 to 588 in FY87, a drop of 28%. Acreage of forestland subject to timber harvesting decreased 35% from 34,300 acres to 22,445 acres; however the number of board feet harvested fell only 15%, from 57 million to 49 million.

Compliance with the 3½ year-old revised Cutting Practices Act appears to be good within the state's forest industry. All parties are by now familiar with the law, and DEM has over the past year taken a harder stance with violaters.

In April of 1987, DEM successfully prosecuted R. Stupski Forest Industries, Inc. of Gilbertville for failure to comply with an approved Forest Cutting Plan. The company was fined \$2,500 in Greenfield District Court for failing to perform erosion control work on a 140-acre parcel they harvested in Athol during 1985.

Timber Harvesting License hearings were held for R. Stupski Forest Industries, Inc. and Connecticut Valley Log Export Company during the year for repeated violations of the Cutting Practices Act. Both companies had their licenses suspended for two months.

To streamline the processing of Timber Harvester Licenses, the booklet "101 Questions About Massachusetts Forest Laws" was revised and reprinted. The new version was mailed to license holders with their FY88 license applications.

There were three Chapter 132 Coordinators meetings during the year, including the first joint meeting between coordinators from both the Bureau of Forest Development and Forest Fire Control. The coordinators continued to keep the State Forestry Committee informed of their experiences with the law in the field, including problems encountered and suggestions for improvements in the Regulations.

In accordance with the Mass. Environmental Protection Act and its Regulations, a Generic Environmental Impact Report is being prepared to cover forest harvest cuttings. A large portion of the report will focus on the Cutting Practices Act and its effectiveness. Towards this end, the Service Foresters recently compiled data from cutting plans filed in FY86. The data collected included information on the properties cut, the type of silviculture employed, the types of wetlands present, and the impact on the wetlands. The information will be used to aid the group preparing the GEIR, and should also prove useful to the DEM staff.

TIMBER HARVESTER LICENSES

A total of 518 timber harvester licenses were issued by the Boston Office during FY1987; of which 440 were to loggers residing in Massachusetts, and 78 to out-of-state loggers. This represents a 14 % decrease from the number of licenses issued during the previous fiscal year.

YANKEE FOREST COOPERATIVE PROJECT

The Yankee Forest Cooperative Project (YFCP) represents a united effort of the three southern New England states and the US Forest Service to increase the "public" awareness for the appreciation and wise management of forest resources, to improve the quality of these resources, to provide for better harvesting and utilization of these resources, and increase economic stability in the area. This project is financed by a USDA Forest Service "Focussed Funding" grant.

Projects which have been completed or are in progress are listed below.

A forestry consultant is being hired to provide technical and support services to forestry clientele in the 40-town "demonstration" area in Massachusetts, Connecticut and Rhode Island. This consultant is Rexford Baker of Auburn, Mass.

The Yankee Forest Digest, a forest management guide for woodland owners, is nearly ready for distribution. One thousand 3-ring binders were silk-screened to YFCP standards by Mass. Correctional Industries. One thousand copies of "A Woodland Management Guide for Massachusetts" were purchased from the Middlesex County Conservation District. Other supplements to the Digest are being printed and developed.

A Marketing/Advertising Consultant has been contracted to assist in our public relations efforts. A fact sheet for the 40-town demonstration area is being developed. There will be an Information/Education Briefing

for municipal officials following the identification of municipal forest lands in the demonstration area. A forestry firm has been contracted to identify and map municipal forestlands in the 4-town area. Displays, brochures, newsletters and YFCP table-top exhibits are being developed and purchased for each state's forestry agency. An Urban and Community Forestry newsletter has been printed and distributed to tree wardens in the three states. Several Urban and Community Forestry brochures are being purchased or reprinted for distribution.

Atlantic Research Company of Boston has been contracted to develop a Secondary Wood Processors Industry Directory for Mass., Conn. and R.I. This is expected to be the most complete listing of "secondary" manufacturing, refinishing and woodworking firms located in the three states. An urban forestry workshop was held for professional arborists personnel at the Waltham Suburban Experiment station. A toll-free number and answering service was installed at the YFCP headquarters in Chepachet, Rhode Island. A woodland owner's workshop was held in both Rhode Island and Connecticut. This workshop focused on helping woodland owners market their forest products.

A forestry firm, subcontracted by the Marketing Consultant, conducted a survey of the assessor's records in each of the forty towns in the demonstration area. The survey resulted in the development of a mailing list of landowners with 10 or more acres, for a total of 8,800 names. The Marketing Consultant prepared and sent an informational brochure on forest management to each of those woodland owners. This direct mailing resulted in 326 new requests for forest management assistance.

FEDERAL FORESTRY PROGRAMS

The Massachusetts Federal Forestry Program allocation for FY1986 was \$118,414, an 11% increase over the \$106,648 for FY1985. All county allocations increased except for Berkshire which decreased about 12%. Plymouth (\$35,471) and Berkshire (\$27,373) had the highest allocations, with Worcester (\$12,702) a distant third.

Because the time between application and completion often overlaps one (or even two) fiscal years, it is difficult to draw a direct relationship between allocations and cost-share expenditures. However, it should be noted that cost-shares for 1986 increased over those for 1985 by 37%, with dramatic increases shown for Hampden and Middlesex. Some of this increase may be due in part to activity under Long Term Agreements (LTA's). Also, the reduction in demand for fuelwood in some areas has resulted in more pre-commercial thinning activity.

The forestry portion of Agricultural Conservation Program consists of "TSI" and planting which is ineligible for FIP, and of special practices which are not included under FIP. The following table indicates the 1986 cost-share expenditures for the forestry portions of Massachusetts ACP:

Total 1986 ACP Cost-Share	\$464,578
Total Wood Production Practices	35,584 (7.64%)
FR-1 (Planting)	5,479
FR-2 (TSI)	17,829
SP-37 (Access Roads for Fuelwood) (LTA)	498
SP-38 (Thinning for Fuelwood) (LTA)	10,956
AP-44 (Stand Analysis for Management Planning)	822

Activity under the Fuelwood Program (SP-37 and SP-38) is limited to completion of LTA's. Expenditures under FR-2 represent approximately 540

acres of Timber Stand Improvement, the majority being on municipal watersheds which are ineligible for FIP. Stand analysis for Management Planning (SP-44) is a new practice implemented mid-way through Fiscal 1986. This practice will likely show a significant increase during Fiscal 1987.

The Conservation Reserve Program, a nationwide program to stabilize soils on highly erodable cropland, has not been successful here in the northeast due to high land values and development pressure. The following table indicates the acres bid and accepted through the fourth signup for the six (6) New England States:

<u>STATE</u>	<u>ACRES BID</u>	<u>ACRES ACCEPTED</u>
Connecticut	276	-0-
Maine	19,885	13,364
Massachusetts	288	32
New Hampshire	8	-0-
Rhode Island	-0-	-0-
Vermont	404	208

The first tree planting practice (CP3) in Massachusetts was accepted during the fourth sign-up period. It is located in Essex County and consists of 17 acres.

TREE FARM PROGRAM

The Massachusetts Tree Farm Committee continued to be very active in this national program, attaining the goal of completing reinspections for the required 250 Tree Farms. Sixty percent of these reinspections were done by DEM Service Foresters. As of June 30, 1987 Massachusetts contained 1,248 Tree Farms comprising 228,495 acres.

At the Annual Meeting in February, 1987, Richard Kulis (service forester, W. Franklin) and Jack Jackson (service forester, Middlesex) were re-elected as Chairman and Vice-Chairman. Doug Leab (RC&D forester) and

Jim Denneson (of New England Forestry Foundation) were elected as Treasurer and Secretary.

Molly Scott, a well-known singer/songwriter from Charlemont, was chosen as the Massachusetts Tree Farmer of 1986. Molly was sponsored by Richard Kulis and Mary Wigmore (her consulting forester). As guest of honor at the Tree Farm Annual Awards Luncheon during "The Big E", Molly entertained the gathering with a selection of songs at the piano.

The Tree Farm Committee has recently selected Basil Gilbert of Rehoboth as Outstanding Tree Farmer of 1987. He will be honored at the Annual Luncheon during the 1987 "Big E" in September.

CHRISTMAS TREE PROGRAM

Through the combined efforts of Jack Jackson (service forester), James MacArthur (FPM&U Specialist) and the Mass. Christmas Tree Association, a dozen trees were donated to Governor Dukakis and the State House for the Christmas season by several MCTA members. The above-named DEM foresters plus parks personnel arranged and assisted in the delivery of the trees to the State House. As in past years, the Governor and Mrs. Dukakis hosted a Christmas tree-lighting ceremony in Doric Hall.

Jackson and other Bureau foresters attended a number of workshops, twilight meetings and field days sponsored by the Mass. Christmas Tree Association, plus a tour of the Western Maine Tree Nursery.

Several Bureau personnel are involved in developing the 1988 Southern New England Christmas Tree Growers biannual conference. Forester Jackson also assisted in constructing and manning the Christmas Tree & Tree Farm booth at the 1986 Topsfield Fair.

Richard Johnson (service forester) assisted the crew of the U.S.S. Constitution ("Old Ironsides") in acquiring a Christmas tree for their ship.

TECHNOLOGY TRANSFER

Bureau foresters, assistant foresters and regional supervisors once again attended the Society of American Foresters Annual Conference in Burlington, Vermont. As with any other profession, it is important to keep abreast of various issues, challenges and new research in forestry. Bureau personnel proved that "continuing education" hones their skill and knowledge of forestry by attending workshops or seminars. The topics of these numerous sessions included tree pathology, cable logging, wildlife management, acid rain, chainsaw safety, land acquisition, computer training and more.

Forestry personnel also represented the Bureau at regular meetings of forestry or environmental groups such as the Cooperative Extension Service, Mass. Forestry Association, Mass. Assoc. of Professional Foresters, A.S.C.S., RC&D Committee and municipal Conservation Commissions.

SPECIAL PROJECTS

A group of foresters from Pakistan interned with Bureau foresters at the Amherst regional office in October, 1986. They were sponsored by the U.Mass. Institute for Governmental Services and the U.Conn. Institute for Public Service International. The goal of the 3-week internship was to provide these foresters an opportunity to observe how American foresters work with private woodlot owners and small forest industries. The knowledge they developed from monitoring and evaluating the social aspects of forestry programs in the U.S. will aid them in identifying opportunities for increased efficiency in projects in Pakistan.

In other projects and activities, Bureau foresters gave presentations on forestry at high school career days, cub scout meetings and at Arbor Day

celebrations in various towns. They also participated in live forestry demonstrations or displays at Forests & Parks Fun Days in state parks and at state or county fairs. Foresters assisted county Conservation District offices by distributing tree seedlings to private landowners.

As the Bureau's wetlands coordinator, Michael Parker (service forester, Hampden) reported that no significant wetlands damage had occurred during the past year. For the Hampden County area, a total of 9 operations took place on municipal watersheds, harvesting 693 MBF and 1433 cords of stumpage within 399 acres. The MEPA proposal for logging thresholds and the resultant DEM activity on the GEIR reflect a growing concern about water quality and timber harvesting.

Chapter 132 Cutting Plans Proccessed

COUNTY DISTRICT	#CUTTING PLANS APPROVED	MBF	CORDS	ACRES
BRISTOL	7	174	400	130
PLYMOUTH, CAPE&ISLANDS	19	523	1,200	386
NORFOLK	8	112	1,418	273
ESSEX	4	129	596	158
MIDDLESEX	27	1,698	1,102	688
N. WORCESTER	72	5,206	4,208	2,356
C. WORCESTER	78	4,440	3,464	2,381
S. WORCESTER	55	4,275	3,800	2,180
E. FRANKLIN	56	5,410	5,109	2,134
W. FRANKLIN	74	6,429	3,869	2,691
HAMPSHIRE	68	6,443	6,932	3,104
HAMPDEN	60	7,424	4,373	3,858
N. BERKSHIRE	27	1,929	2,149	1,004
S. BERKSHIRE	36	4,229	4,811	1,956
STATE TOTALS	<u>591</u>	<u>48,421</u>	<u>43,431</u>	<u>23,299</u>

Cutting Plans Disapproved: 25

Timber Harvesting Licenses Issued: 518

In-State	-	440
Out-of-State	-	78

STATE FORESTLAND MANAGEMENT

MANAGEMENT FORESTRY OVERVIEW

Management forestry teams surpassed FY1987 targets on forest products sales in terms of contractual revenue, board feet sold and cords sold. This high level of effort and achievement appears to have correlation with the fact that the forest industries in general have enjoyed a "banner" year.

COMMERCIAL SAWTIMBER SALES

Nearly 5,100 MBF of sawtimber were marked during FY1987, with 4,812 MBF and 4,872 cords sold, mostly to private logging contractors. These sales generated nearly \$540,000 in contractual revenue for the states' General Fund.

COMMERCIAL FUELWOOD SALES

Unlike the above-mentioned sawtimber sales, commercial fuelwood sales generally contain low-quality or smaller diameter stumpage that is unlikely to grow to sawtimber-quality trees. These sales are also marked as a means of prescribing timber stand improvement, thereby allowing more growing space for vigorous, potential sawtimber trees.

During FY1987, over 250 acres of DEM forestland were thinned out during fuelwood sales, resulting in 1,532 cords sold for a total of \$14,821 in contractual revenue.

HOME FUELWOOD PROGRAM

Almost 10 years old, this program continued to be viable in accomplishing timber stand improvement on state forestland containing a large pro-

portion of poor-quality trees. Not surprisingly, the figures for Home Fuelwood lots marked and sold were down significantly from previous years,⁶ indicative of a regional decline in the use of wood for home heating. Of 286 cords marked, 620 cords were sold on 68 lots, generating \$6,859 in revenue for the General Fund. This represents a 60% decrease in Home Fuelwood revenue from the previous year and a 40% decrease in the number of cords sold. The price per cord also dropped from \$16 to \$11.

MISCELLANEOUS FOREST PRODUCTS SALES

In the Southeast District, Austin Mason (mgt. forester) set up a biomass sale at Myles Standish State Forest. More than 3,212 tons of timber was harvested by whole tree chipping. This highly mechanized and efficient method of harvesting has made possible much needed thinning work in the pine plantations of MSSF.

The Northeast management forestry team marked over 22 MBF of timber, which was harvested by D.E.M. personnel, and sawn into lumber for in-house use by the Region's mobile dimension sawmill and by the sawmill at the Warwick Prison Camp.

COMMERCIAL SAWTIMBER SALES

<u>District</u>	<u>Revenue Committed</u>	<u>MBF Sold</u>	<u>Cords Sold</u>	<u>Acres</u>
SOUTHEAST	\$13,639.79*	168.2	1,606	139
NORTHEAST	31,041.70*	345.4	71	40
MID-STATE	29,027.25	205.0	-	55
E.CONN.VALLEY	48,212.90	509.6	475	195
W.CONN.VALLEY	38,713.00	801.6	864	183
N. BERKSHIRE	48,125.00	605.0	972	62
C. BERKSHIRE	185,324.13	1,199.1	506	260
S. BERKSHIRE	145,503.92	978.3	378	306
TOTAL	\$539,587.69	4,812.2	4,872	1,240

* Southeast District figures include the sale of 113.7 MBF and 133 cords on 41 acres of Div. of Fisheries & Wildlife land, receiving \$10,543.52 revenue. Storm salvaged timber from Myles Standish State Forest, of 0.8 MBF, not included in table, as used for in-house use.

* Northeast District figures do no include 22.4 MBF harvested and sawn for in-house use.

* E.Conn. Valley District revenue figures include \$24,228 worth of "in-kind" improvement services. Volume figures do not include two unsold timber sales comprising 261 MBF and 310 cords.

* N. Berkshire District revenue figure includes \$7,000 of "in-kind" revenue.

COMMERCIAL FUELWOOD SALES

<u>District</u>	<u>Revenue Committed</u>	<u>Cords Sold</u>	<u>Acres</u>
SOUTHEAST	\$2,030.00	133	21
NORTHEAST	2,908.00	313*	47
MID-STATE	2,879.75	282	87
E.CONN. VALLEY	5,629.00	534	75
W.CONN. VALLEY	none	0	0
N. BERKSHIRE	975.00	195	19
C. BERKSHIRE	none	0	0
S. BERKSHIRE	<u>400.00</u>	<u>75</u>	<u>10</u>
TOTAL	\$14,821.75	1,532	259

* Northeast District figures include stumpage marked the previous year but sold in FY'87.

* E.Conn.Valley District figures include \$5,200 as "in-kind" improvement services.

HOME FUELWOOD

<u>District</u>	<u>Revenue Committed</u>	<u>Cords Sold</u>	<u># Lots Sold</u>	<u>Acres</u>
SOUTHEAST	\$ none	-	-	-
NORTHEAST	4,418.26	235*	44	65
MID-STATE	1,510.98	80	16	12
E.CONN.VALLEY	602.00	203	5	29
W.CONN.VALLEY	278.00	97	2	7
N. BERKSHIRE	none	-	-	-
C. BERKSHIRE	none	-	-	-
S. BERKSHIRE	50.00	5	1	2
TOTAL	\$6,859.24	620	68	115

* Northeast District volume figures do not include an additional 51 cords that were unsold.

TOTALS - FOREST PRODUCTS SALES

<u>Type of Sale</u>	<u>Revenue Committed</u>	<u>MBF Sold</u>	<u>Cords Sold</u>	<u>Acres</u>
Comm'l Sawtimber	\$539,587.69	4,812.2	4,872	1,240
Comm'l Fuelwood	14,821.75	-	1,532	259
Home Fuelwood	6,859.24	-	620	115
TOTALS:	\$561,268.68	4,812	7,024	1,614

SPECIAL PROJECTS

The following projects highlighted here are just several of many that were participated in during the past year. DEM Management foresters were involved in an inter-agency project with the Bureau of Solid Waste and the Dept. of Food & Agriculture. The project was developed to deal with the disposition problem of non-hazardous organic composting materials such as animal manure, leaves, grass clippings, etc. DEM's role was to identify 10 possible sites on its lands east of the Connecticut River Valley for

dumping these materials. These sites would then have concrete basins installed to collect the composting materials. Half of the seasoned compost would be sold to a private contractor, while the Division could retain the remainder for its own park use. At this time, 19 potential sites had been identified, with several planned for use during the coming year.

Management forestry teams from Region II and III participated in a project to raise shiitake mushrooms at M.C.I. Shirley, developed by a private Japanese entrepreneur and the Forest Products Marketing Specialist. Foresters marked over 30 cords of oak, which were then harvested by prison crews into several hundred short logs. The logs were laid on the ground of a field at the prison, and covered with branches so that injected spores of the shiitake fungus could cultivate.

William Rivers (E.Conn.Valley District) made a semester's sojourn to academia, teaching silviculture to forestry students in the Forestry Department of nearby University of Massachusetts. Through forest products sales in his district, forester Rivers was able to have 14,000 white pine 2/0 seedlings planted on about 47 acres that had suffered severe insect damage.

The Western Conn. Valley District foresters led a group of about 40 soil scientists through plantations of Norway Spruce in the H.O. Cook State Forest. These scientists were in nearby North Adams attending a Northeast Forest Soils Conference. During the tour, a history of the forest and its plantations was presented as well as past silvicultural practices and soil types.

Several management foresters participated in setting up and manning forestry displays or booths at various county fairs or The Big E.

Wood Producers Association, has been formed to implement this project. Their goal is to develop a product line which can fully utilize these grades of material and then develop a consumer-oriented advertising campaign to initiate the demand for this product. Project completion date is expected to be in fall of 1988.

SHIITAKE MUSHROOM PROJECT

This project is a tri-agency effort between the Massachusetts Departments of Environmental Management, Corrections and Agriculture; and initiated by the M&U Specialist in cooperation with Mr. Joo-Hua Chung, a shiitake mushroom expert. In bringing together representatives of the other two state agencies, the M&U Specialist sparked their interest to make this unique collaborative project a reality. DEM foresters provided the roundwood logs to grow the mushrooms on and posts to hold up the shade netting. The Department of Corrections provided Mr. Chung a "consultant" contract, a four-acre pilot project site at MCI Shirley and the labor to prepare and maintain the site. The Department of Food & Agriculture will provide the Marketing efforts for the mushrooms when they mature in the spring of 1989. If this project is successful, the cultivation of these gourmet mushrooms will provide a vehicle for utilizing approximately one million cords of roundwood annually from a mix of underutilized native species.

MATURE INDUSTRY ASSISTANCE PROGRAM

The "Massachusetts Forest/Wood Products Mature Industry Assistance Program", an innovative and comprehensive piece of legislation, was re-submitted as a Senate bill by State Senator Robert Wetmore (D-Barre) in

January, 1987. Following a hearing in March in which the bill received supporting testimony from several industry groups, it was then reported successfully out of the Joint Committee on Commerce & Labor. The bill is presently before the Joint Committee on Ways & Means as Senate Bill 104.

As a result of this Senate bill, the Massachusetts Land Bank received a \$10,000 grant to analyze the needs of the Massachusetts Forest/Wood Products industry. The outcome of Senate Bill 104 looks favorable.

WOOD-COAL ENERGY PROJECT

Proposed by the Chief Forester, this federal "focussed-funding" project is intended to encourage more use of wood chips or wood residues by Massachusetts industrial coal-burning facilities. Funds are available to take powerhouse engineers or other officials of coal-burning utility plants, industrial facilities and public institutions to tour industrial facilities in other states that utilize wood or wood co-fired with coal for their energy needs.

From a direct mailing to the dozen known coal-burning facilities in Massachusetts, the M&U forester received responses from 6 that indicated an interest in learning more about industrial wood-firing technology. By the end of FY1987, the M&U forester was setting up tours to other states, to take place in the coming months of FY1988.

TECHNOLOGY TRANSFER HIGHLIGHTS

The M&U staff, along with the Chief Forester, continued to interact with the wood industries by attending or conducting workshops, meetings and conferences. They attended the 1987 Annual Meeting of the Northeastern Lumber Manufacturers Association (NeLMA) in Boston. James MacArthur serves

on the Meeting Committee of this lumber-grading trade organization. The M&U staff spoke to a meeting of the Mass. Wood Producers Association about on-going marketing projects and to encourage the group's support of pending industry assistance legislation. The M&U Specialist attended the Annual Meeting of the Forest Products Research Society in Louisville, Kentucky. He also spoke about the Massachusetts wood industry during a public affairs hour on a Boston radio station.

With assistance from the M&U staff and several other Bureau personnel, the Chief Forester hosted the 21st Annual Meeting of the Northeastern Area Association of State Foresters (NAASF) in July, 1986. Held in Springfield, the 4-day conference featured discussions of the Focussed Federal Assistance process, implementation of the NAASF "White Paper" and a tour of a furniture-making company.

Requests for information, whether of a technical or marketing nature, increased significantly by telephone or by letter. The M&U staff responded promptly to a wide array of queries, not only to those involved in making wood products, but to foresters, loggers, landowners, business-people, industry publications and school-children.

G.O.A.L.S. INVOLVEMENT

All of the management foresters continued to be involved in the multi-disciplinary development of GOALS plans (Guidelines for Operations and Land Stewardship) on DEM properties in cooperation with the Office of Planning & Development. The foresters' role includes stand analyses of on-the-ground resources, research on land-use history and ecology, drafting 10-year recommendations on management and silvicultural practices to be implemented, mapping, and attending both public and advisory committee GOALS meetings on a regular basis.

Foresters participated in GOALS planning for the following state properties: Myles Standish State Forest, Wompatuck State Park, Walden Pond State Reservation, J. Harry Rich State Forest, Moore State Park, Douglas State Forest, Wendell State Forest, DAR State Forest, Mt. Greylock State Reservation, Tolland State Reservation and Pittsfield State Forest.

During the past year, the forestry sections of several GOALS plans were completed as well as some maps.

RESOURCE CONSERVATION & DEVELOPMENT

David Robb was the RC&D Forester until September of 1986 when he transferred to the position of Northern Berkshire Management Forester.

As outlined in the Plan of Work, a major focus continued to be the establishment of a shortwood processing plant in the RC&D area. Dave provided active assistance in the preparations and early stages of a yield study being conducted by Forest Products Associates of Greenfield. In addition he prepared and submitted a grant proposal to the U.S. Forest Service for additional funding of this project.

As an alternative to the traditional Tree Farm Booth at the Eastern States Exposition, he organized and directed a very successful portable information booth. The booth was jointly operated by the Tree Farm Committee, RC&D Council and Mass. Forestry Association, and appeared at the Cummington, Blandford, and Greenfield Agricultural Fairs. Many forest landowners who had no previous contact with a professional forester received technical information, and referrals to the proper DEM Service Forester. Bruce Anderson (C. Berkshire mgt. forester) obtained the materials for the portable booth, as well as designing and building it.

Dave also attended a week of training in the use of the SILVAH computer forest inventory system from the U.S. Forest Service in Pennsylvania.

Douglas Leab, a newly appointed Assistant Forester, was chosen to fill the RC&D vacancy after Dave moved to the NBK Management Forester position. At this time, the RC&D forester was reassigned to Region IV. Office space is now shared with the RC&D Coordinator in Hadley. This relocation was made to provide closer coordination, and better accessability to RC&D members and staff.

Since assuming the position in October, Doug continued working with Forest Products Associates on establishing a shortwood processing plant. He made arrangements for himself and two interested forest product business-men to travel to the U.S. Forest Service Laboratory in Princeton, W.V. to examine the "System Six" shortwood operation.

Doug was also active in the operation of the 1987 Northeast Wood Products Exposition (NEWPEX).

Under the direction of Jim MacArthur, he assisted in planning and hosting a meeting of Marketing & Utilization Foresters from New England and New York, held at the Harvard Forest in Petersham.

The RC&D Forester conducted two workshop series late in FY1987. The first, held on the Adams Fire District was a Cable Logging Demonstration attended by about 50 foresters and loggers. The second was a Chain Saw Safety and Productivity workshop featuring Soren Eriksson and attended by 80 professional loggers, arborists, and foresters.

A comprehensive Plan of Work for FY'88 has been completed and submitted to the U.S. Forest Service for funding. The major focus of this plan is the development of a resource data base for use by new or expanding forest industries in the RC&D area.

Much of the remaining time has been spent at various training sessions including Dry Kiln Operations, Hardwood Lumber Grading, Forest Product Exporting, and the annual meetings of the Society of American Foresters in Burlington, and the Northeast Lumber Manufacturers Association in Boston.

URBAN & COMMUNITY FORESTRY

As urbanization continues to expand in cities and towns across the Commonwealth, many older tree plantings have been infringed upon and would be considered in a state of decline while the majority of new plantings in urban areas are short-lived. More awareness is being generated regarding the benefits trees provide in urban areas and in the importance of properly managing this valuable resource. Ernest DeRosa (Principal Planner of Urban Forestry) provides educational and technical assistance to communities relative to the establishment, management, maintenance, protection and preservation of urban trees.

From his field office at the Suburban Experiment Station in Waltham, Mr. DeRosa also provides assistance to University of Massachusetts Cooperative Extension programs. This assistance includes lecturing on urban forestry-related topics at various county Cooperative Extension offices throughout the state, educational and technical advice to Extension personnel, and laboratory and field diagnosis on tree and shrub problems. Mr. DeRosa co-authors the Cooperative Extension newsletter "TREE NEWS", which is distributed to approximately 1500 people involved with state, municipal and commercial tree care.

In highlighting FY'87 urban forestry activities, Mr. DeRosa served either as an advisor, committee member, or executive officer to several local tree-related organizations. Mr. DeRosa was program chairman of the Massachusetts Tree Wardens' and Foresters' Association, responsible for arranging the speaker program for their annual meeting held February 3-4, 1987 at the King's Grant Inn in Danvers. Others included the Massachusetts Arborists Association executive committee and the Tree Wardens, Arborists, Utilities Conference planning committee, which arranged the speaker program

for this 3-day meeting held March 10-12, 1987 at the Quality Inn in Chicopee. Mr. DeRosa presented a paper on "Dogwood Problems" at this conference.

Regional groups that Mr. DeRosa has been working with include the New England/New York Urban Forestry Working Group, of which he hosted the annual meeting held October 21-23, 1986 in Boston, and the New England Chapter of the International Society of Arboriculture, of which he is currently vice president. Mr. DeRosa also represented DEM at the Third National Urban Forestry Conference held December 7-11, 1986 in Orlando, Florida.

In a continuing effort to increase public awareness of DEM urban forestry programs, lectures were presented at Maudslay State Park, Fall River Heritage Park and Gardner Heritage State Park. Mr. DeRosa also provided several on-site visits to various state parks to assist park supervisors with shade tree management. An all-day workshop on "Diagnosing Urban Tree Problems" was presented February 20, 1987 at the Suburban Experiment Station. This workshop was well attended by DEM and Yankee Forest Cooperative Project personnel.

Mr. DeRosa chairs the urban and community forestry sub-committee of the Yankee Forest Cooperative Project. This sub-committee's major accomplishment was the formation of a mailing list of all Tree Wardens in the three states. Two newsletters have been prepared and distributed to these Tree Wardens, containing pertinent information about urban forestry in the tri-state area.

One of the keys to a successful statewide urban forestry program is developing public awareness and good public relations in our communities. Arbor Day, which is observed in Massachusetts on the last Friday in April of each year, provides those involved with trees and natural resource

education and conservation a designated day to promote the planting of trees for the benefit of future generations.

The most successful program in this regard is the Tree City USA Award Program. This program is sponsored by the National Arbor Day Foundation in conjunction with the National Association of State Foresters. The Tree City USA Award gives national recognition to those communities that have made a special commitment to the planting and care of trees and continue to fulfill the qualifying standards each year. Currently the following Massachusetts communities have been recognized as Tree City USA's:

Acton	Danvers	Natick	Springfield
Amherst	Framingham	Reading	Wayland
Belmont	Lexington	Sharon	Wellesley
Brookline	Manchester	South Hadley	West Springfield
			Worcester

Mr. DeRosa presented these communities the Tree City USA Award in conjunction with their local Arbor Day celebration. Highlighting this year's presentations was the acceptance of the award by the mayors of two of the largest cities in Massachusetts, those being Mayor Richard Neal of Springfield and Mayor Timothy Cooney of Worcester.

FOREST RESOURCES PLANNING PROGRAM

The primary goal of the program is to prepare, implement and update the Massachusetts Forest Resources Plan. This Plan provides policy and program direction for the Division of Forests & Parks and also the Commonwealth's portion of the Federal Forest and Rangeland Renewable Resources Planning Act (RPA) efforts. The program is directed by Dr. Muriel E. More.

During FY87 program efforts focused on implementing the initial state forest plan completed in FY86 and in starting work on updating the Generic

Environmental Impact Report of forestland management practices. To initiate the Plan implementation, a two-color summary brochure of the state forest plan was developed for statewide distribution. To date, distribution has included visitor centers and information booths throughout the state forest and park system, including the urban heritage parks, the Metropolitan District Commission and the Massachusetts Forestry Association for inclusion in a fall 1987 newsletter. Emphasis in the upcoming year will focus on documenting how well the plan is being implemented by the Division and outside organizations.

Most time, however, was spent organizing the Generic Environmental Impact Report (GEIR) effort. According to the Massachusetts Environmental Protection Act (MEPA) regulations, the Division must periodically update its GEIR of forest management practices on Division lands. While past GEIR's have dealt only with forest management practices on Division properties, the current effort is also examining the impacts of timber harvesting on water quality. To assist the Division with this project, MEPA has established a fifteen member technical advisory committee, which has formed four sub-committees to focus on specific aspects of the project. This effort is scheduled for completion in late 1988, and will comprise the main focus of the Forest Planning Program during the next fiscal year.

In other forest planning activities, Dr. More has continued to serve as the Division Coordinator for the Massachusetts Prime Timberlands Mapping Project. Utilizing a site classification system that estimates both hardwood and softwood potential productivity, the University of Massachusetts' Department of Forestry & Wildlife Management has been under contract to inventory and map commercial forestland in Massachusetts. To date, work has been completed in all counties, except Worcester, which will be finished when necessary soil surveys are available in 1988. In the meantime, the

University will continue to verify the accuracy of the mapping system and to distribute mapping products to Division administrative regions, Massachusetts' communities and other states. In addition, Dr. More has continued to participate on the Natural Resources Planning Committee of the State Commission of Soil, Water and Related Resources which is overseeing the development of a five-year natural resources plan for Massachusetts and on the Information and Education Subcommittee of the tri-state Yankee Forest Cooperative Project. Moreover, she has been working on the Supply/Demand Subcommittee for the 1988 Statewide Comprehensive Outdoor Recreation Plan and has continued to serve as an Adjunct Assistant Professor of forest policy and planning in the Department of Forestry and Wildlife Management at the University of Massachusetts.

Finally, Dr. More attended the twenty state Northeastern Forest Resource Planners Association Conference and received the 1987 Crystall Ball Award which is presented annually by the Association.

COMPUTER PROGRAMMING & DATA PROCESSING

DEM Foresters, Assistant Foresters and Forestry Clerks continued to expand their computer program library and to sharpen their computer skills. Training in a new program or package can be slow with an average 60 hour training period needed to become proficient in a given package. As a direct result of training, the Bureau is becoming computer-literate and the machine has been doing more of the work.

LOTUS and MULTIMATE were the key computer packages used during FY1987. LOTUS is a spreadsheet program that is used to calculate timber volumes, analyze stand inventory data etc. MULTIMATE is a word processing package

that is used to generate contracts, bid prospectus, land management plans, mailing lists etc.

Assistant Forester Bill Cote is the in-house central coordinator for computer needs. Bill keeps his eyes open for accessories to enhance the computer system and generally makes life easier with computer tips and information pertaining to public-domain utility programs. He patiently trained and tutored a coordinator in each region and takes pleasure in seeing these regional computer coordinators take off on their own, solve computer problems and create worksheets and programs. Each regional coordinator is responsible for loading new programs and assisting the region's staff with day-to-day program problems.

In Region 1 Service Forester Joe Perry, in cooperation with Ken Foley, modified budgetary spreadsheets for statewide application. Joe created another spreadsheet to track seasonal and year-round position numbers, a payroll file, mailing macro's and a stump-to-tree diameter macro. Joe, John Clement, Bill Cote and Karen Mead modified a Chapter 61 spreadsheet with recommendations from the Chapter 61 Coordinators.

In Region 2, Assistant Forester Harry Penniman created 2 "SCORE" worksheets to weight and compare levels of responsibility in Massachusetts State Forests and Parks. Harry also created a series of budgetary account spreadsheets (ATT, NEWTEL, GAS, LIGHTS, and WATER) to track spending by activity numbers, vendor, etc. and inventory spreadsheets (VEHICLES, TRAILS, and SEASONAL). Harry also created TALLYT, a volume program. TALLYT grew to be known as TALLYSBK when Anne Marie Loud expanded the worksheet to calculate volume for a multi-species sale.

Service Forester Joe Smith set up budgetary account and personnel spreadsheet in Region 3. He used MULTIMATE to generate forestry form letters

for Chapter 132 and harvesting contracts. Joe also created a spreadsheet for recording Chapter 132 information and this project was an important accomplishment for the Bureau.

In Region 4, Forestry Clerk Karen Mead maintains the Harvesting License database for the counties west of (and including) Worcester County. The mailing list for loggers is set up for computerized labels. In FY87, Bill Cote upgraded the computer in Region 2, 4, and 5 to 640K. Regions 1,3,5 and Boston are scheduled for FY1988. In addition, Bill created several budgetary account spreadsheets.

In Region 5, Management Forester Conrad Ohman and Assistant Forester Anne Marie Loud used MULTIMATE to generate 2 GOALS plans. Anne Marie also created stand analysis inventory spreadsheets, and data entry is complete for inventoried stands in Region 5. This project is complete on the following Forests: Pittsfield, Greylock, Taconic, Tolland, October Mountain and Otis. Management Forester, Dave Robb generated a cutting schedule for North Berkshire County that was based on this computerized data base. Anne Marie created PARKACRE and TOWNACRE, spreadsheets designed to record cumulative acreage of DEM property in Berkshire County. Contracts and form letters necessary for timber sales administration were entered by Forestry Clerk Donna Stimpson and Conrad.

FY1987 was a productive year. Questions, conflicts, goals and recommendations play an important role in planning for wise use of a resource. The Computer Communication Coordinators can see the need for additional computers to solve access problems. An issue that needs to be addressed is the allocation of adequate training time.

ACID DEPOSITION RESEARCH PROGRAM

In January 1987, Dr. Gretchen Smith was appointed Program Manager for DEM's Acid Deposition Research Program at UMass. Along with Dr. Don Mader and Dr. Bill Manning, she implemented field and laboratory research designed to further the analysis of stress symptoms in Massachusetts' forests. This work follows directly from the aerial survey work and preliminary ground surveys completed last year by Prof. MacConnell and Dr. Matt Kelty respectively. The primary objectives of the '87 field season were to describe the extent and severity of decline problems in Massachusetts by tree species and location, and to determine causal relationships to the extent possible. DEM field personnel were actively involved, helping with site selection and other survey aspects of the field studies.

Coordination of the Massachusetts Program with other regional programs sponsored by federal agencies in the U.S. and Canada was established. Funds awarded by the USDA Forest Service were used to supplement the DEM-sponsored study of red spruce decline on Mt. Greylock. Permanent symptomatology plots were established throughout the natural range of red spruce in Western Mass.

Field crews obtained ample evidence of unusually high mortality rates in red spruce stands both on and off Mt. Greylock. The residual trees exhibited a variety of symptoms, some easily attributable to known insect and disease pests, and some of unknown origin. Complementary studies are being conducted by Dr. Mader on acid rain-induced changes in soil chemistry and productivity, and by Dr. Manning on root pathogen associations.

Potential acid rain effects on sugar maple are also of primary concern. A health questionnaire was distributed to sugarbush owners in June, and a committee established by the Mass. Maple Producers Association to work with

Dr. Smith on maple decline issues. She also traveled to Ontario and Quebec on an information exchange mission, and plans to implement a preliminary field assessment this year to provide baseline information on the decline status of Massachusetts sugar maples.

The response of white pine to air pollution stress was also investigated. Needle chlorosis, tipburn, and premature defoliation were all noted on white pine growing in the vicinity of the Mt. Tom Power Plant and, to a lesser extent, at the Quabbin Reservation. A comprehensive survey of air pollution damage to white pine throughout the state will be completed this fall.

Dr. Mader submitted this final report on forest growth trends in Massachusetts in relation to potential effects of acid deposition. Red and white pine were the species under investigation. Overall, there was no clear evidence of a general growth decline in either species although high mortality rates were evident in some areas.

Dr. Smith continues to visit stressed areas identified by DEM foresters, State Pest Management personnel, and private landowners. In addition to those mentioned previously, tree species exhibiting the most dramatic symptoms of decline, which may be attributable to acid rain and associated air pollutants, include Norway spruce and white ash.

FORESTRY REVENUES

The Forestry account derived income from several sources-namely from federal grants, forest products sales from state lands, issuance of timber harvester licenses, filing fees and leases/permits. These monies totalled \$751,272 for FY 1987.

The following is an analyses of the Bureau's receipts:

<u>State Lands and Service Forestry Income</u>	<u>Amount</u>
Timber Harvester Licenses	\$ 5,380.00
Forest Products Sales*	561,268.68
Chapter 61 Tax Law Filing Fees	23,769.73
Rents/Leases	15,499.44
	<hr/>
Sub-Total	\$605,917.85
 <u>Federal Grants</u>	
U&CF	36,010.00
RC&D	25,000.00
RFA	14,782.00
FRP	52,509.58
FIP	4,066.50
ACP	12,987.00
	<hr/>
Sub-Total	\$145,354.48
Total	\$ 751,272.33

* Includes "in-kind" services with a dollar value of \$36,428 from several sales.

ANNUAL REPORT

FISCAL YEAR 1987

BUREAU OF SHADE TREE MANAGEMENT AND PEST CONTROL

CHARLES S. HOOD, CHIEF

1. SUMMARY OF CONDITIONS AND ACTIVITIES FY 87

It would appear that gypsy moth populations are finally returning to endemic numbers in more of the state following the buildup which began in the late 1970's and culminated in the record breaking outbreak in 1981. District supervisor reports concerning gypsy moth activity in June of this year all indicate noticeable incidence of the nucleopolyhedrosis virus or wilt disease leading to the prediction that defoliation will be considerably less when the July 1987 aerial survey has been completed.

The oak leaf tier continues to present a problem in the Warwick State Forest as well as in the areas in Southeastern Massachusetts, particularly the Medfield, Dover, Westwood area.

An infestation of fall cankerworm continued for the second year in the Braintree-Weymouth-Hingham area. Feeding has also been noted on Nantucket and Martha's Vineyard.

In early June of 1987 it was noted that sugar maple in the western part of the state was under some kind of stress. Samples taken to the U.S. Forest Service Laboratory in Durham, N.H. revealed that the problem was caused by a tiny insect known as the pear thrips.

Of major importance in Central Massachusetts in the spring of 1987 was a late April snowstorm which caused heavy damage to trees. This created a severe problem for certain of the parks as they were attempting to get ready for the summer season.

The shade tree management aspect of Bureau responsibilities has been slow to get started. The final report of the Shade Tree Advisory Committee as presented to the Commissioner during the year points in the right direction and if implemented, should get the program started.

2. GYPSY MOTH

A. Defoliation and Prediction

As usual, during the first few days of the new fiscal year, the aerial survey was conducted. North and south flight lines were flown and the entire state was observed. Two observers recorded all noticeable defoliation on geological survey maps. Defoliation by the gypsy moth was noted on 404,538 acres, down 225,000 acres from the preceding year (see Map A). On 61,447 acres the defoliation was classified as light (0-30%), 114,073 acres was medium (31-60%), and 229,018 acres was heavy (61-100%). Except for a small area in Essex County most of the defoliation took place in southern Middlesex and southeastern Worcester Counties and on Cape Cod.

B. Control Program

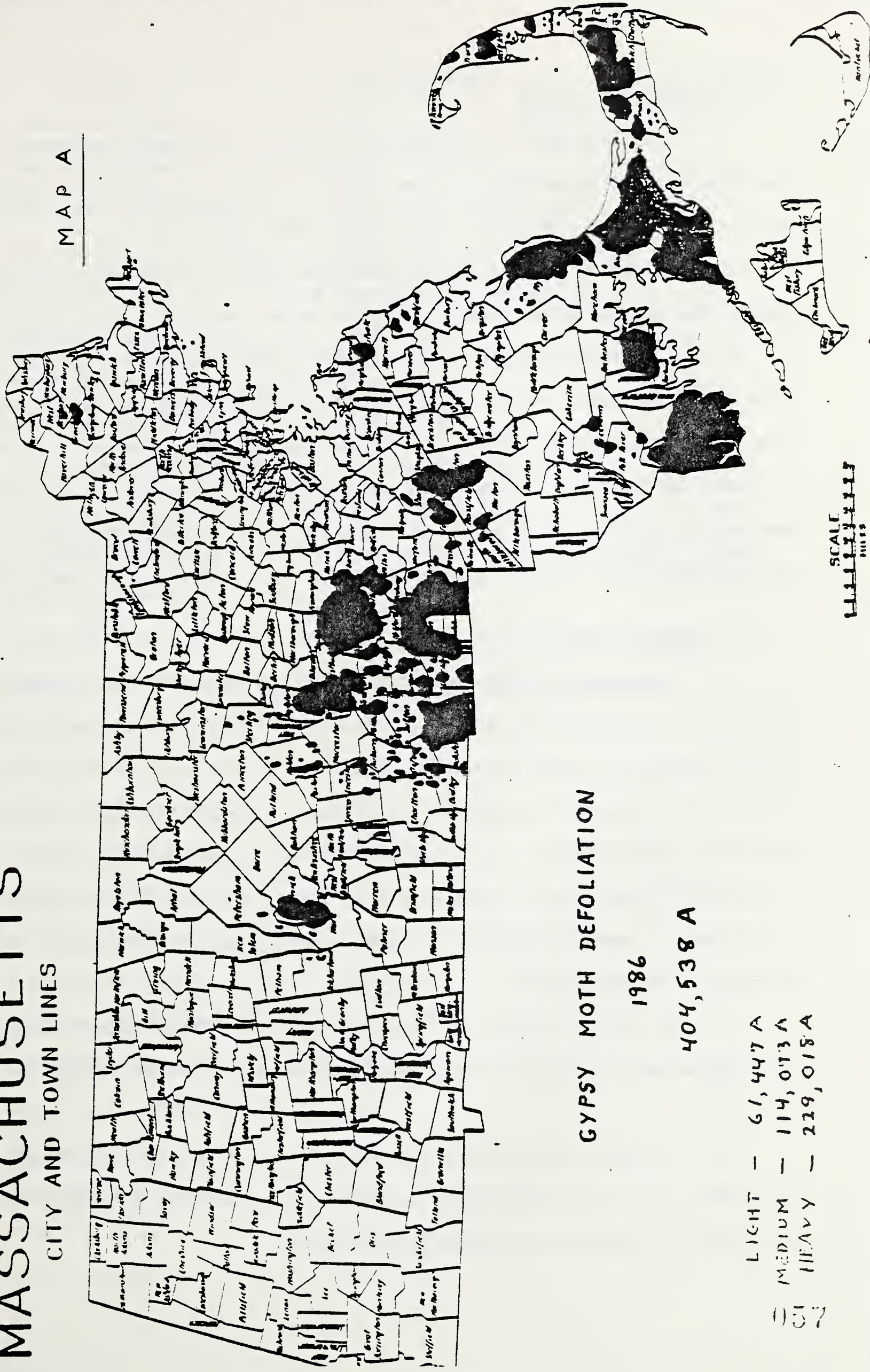
Although a number of communities had gypsy moth populations warranting consideration of aerial spray programs, none took place during the past year. According to district supervisor reports the following reasons were given: would prefer that a material other than *Bacillus thuringiensis* be recommended; not enough complaints to justify a program; communities were advised to concentrate their efforts on their shade trees rather than woodlands.

The Bureau mist blower was used to apply *Bacillus thuringiensis* for control of the gypsy moth at Dighton Rock State Park, Demarest Llyod State Park, Freetown State Forest, Ashland State Park and Hopkinton State Park. Good foliage retention was attained at each of these areas.

MASSACHUSETTS

CITY AND TOWN LINES

MAP A



GYPSY MOTH DEFOLIATION

1986

404,538 A

LIGHT - 61,447 A
 MEDIUM - 114,073 A
 HEAVY - 229,018 A

SCALE
 0 10 20 30 40 50 60 70 80 90 100
 MILES

C Cooperative Studies

Work continues in cooperation with the Entomology Department of the University of Massachusetts in an attempt to develop a sampling tool for predicting a sudden rise in low level gypsy moth populations.

Specially adapted traps baited with gypsy moth pheromone were again placed this year at approximately 175 sites across the state to capture male moths. Also at each of these sites burlap bands were placed around 20 trees susceptible to attack by gypsy moth. At the end of the gypsy moth feeding period and subsequent moth flight the traps will be collected and the male moths counted. At the same time the number of egg masses found under the burlap will be counted. It is hoped that eventually the information gathered will allow us to accurately predict a population increase and thus be able to knock down an outbreak before it becomes widespread.

D. Parasite Work

Anastatus disparis: This gypsy moth egg parasite was released on 16 new sites on Cape Cod in July 1986. A total of 42,597 adult *Anastatus* were reared at the Stow facility and released on Cape Cod by Supervisor Kelliher. Host egg masses were collected from these sites in January 1987 and evaluated at Stow to determine establishment of the parasite. No host egg masses were found on four sites due to population collapse from the virus. From the other 12 sites adult *Anastatus* were reared from the egg masses. The parasite is now considered re-established in those areas.

In the late winter and early spring of 1987 Doug Trefry collected 6,039 host egg masses and reared 451,281 adult *Anastatus* for release on Cape Cod in July 1987.

A compilation of all the known releases of parasites and predators of the gypsy moth in the Commonwealth is given below. Additional releases may have been made by others but no records are available.

<u>Species</u>	<u>Year Released</u>	<u>Total Released</u>
Anastatus disparis	1908 - 1927	31,459,193
Ooencyrtus kuwanai	1909 - 1927	12,419,299
Compsilura concinnata	1906, 1907, 1909, 1910	?
Tachina Lavarum	1906 - 1911, 1925 - 1927	?
Tricholyga grandis	1906, 07, 09, 11, 24, 25, 27	?
Apanteles melanoscelus	1911 - 1927	78,447
Apanteles liparidis	1908,09,10,12,22,23	14,170
Apanteles porthetriae	1924 - 1927	?
Parasetigena silvestris	1910, 23, 24, 25, 26, 27	16, 122
Hyposoter disparis	1912, 1929 - 1931	14,562
Blondelia nigrypes	1906,07,09,11,1925-27,1928-32	5,000
Blepharipa pratensis	1907 - 1931	?
Palexorista inconspicua	1906,09,11, 1923-1928	?
Exorista Separata	1907,08,11,25,27	?
Theronia	?	?
Pimpla	1906,07,09	?
Brachymeria Intermedia	1909, 1911	?
Monodontomerus aereus	1906 - 1910	?
Meteorus japonicus	1923	?
Exorista libatrix	1906 - 1910, 1927 - 1933	1,577
Blepharysa schineri	1910	700
Calosoma sychophanta	1908 - 1914	27,622
Apanteles liparidis	1976,1978	3,600
Blondelia nigripes	1978	1,862
Brachymeria lasus	1978, 79, 80	14,410
Coccygomimus disparis	1978, 79, 80	8,519
Exorista japonica	1978, 79, 80	15,380
Exorista larvarum	1977	352

Palexorista inconspicua	1976	11,500
Palexorista larvarum	1977	400
Rogas lymantriae	1983	1,574
Anastatus disparius	1979 - 1987	1,267,432

3. OAK LEAFTIER

Croesia semipurpurana

The infestation in eastern Franklin County continues to spread and intensify. The Town of Warwick is suffering most of this increase. A total of 20,096 acres were observed and recorded on a June 15, 1987 aerial survey. (see Map B)

On the south shore the tier is still present but the oak leaf skeletonizer and the gypsy moth mask any accurate acreage determination.

Work with the U.S. Forest Service office in Durham, N.H, continued regarding the tier feeding on white oak in addition to the black oak group. Eggs, larvae and pupae were all found on white oak in the Wendell - Warwick area. Available literature does not indicate that white oak is a host for this insect.

In co-operation with the U.S. Forest Service a trapping program of adult male tier moths were carried out in several locations across the state. These areas have a history of tier defoliation. They were located in Southern Berkshire County, western Hampden County, eastern Franklin County and on the south shore. The results of this program have not been tabulated at this time. The purpose is to arrive at a means of population prediction by adult monitoring rather than the current tedious, time consuming method of egg counting with a microscope.

This program will continue with the U.S. Forest Service supplying the pheromone lure and traps and data compilation. The states of New Hampshire and Maine are also involved in this program.

Experimental Control of Oak Leaf Tier With Dimilin - Applied pre-hatch

As indicated in last years report there have been reports of contact properties in the use of difloubenzuron (Dimilin). To further test the contact activity of this material against the oak leaf tier two spray plots and three check plots were established in the Warwick State Forest. Both spray plots were treated on April 27, 1987 prior to tier egg hatch. Enclosion was taking place on plot 1 and check 1 but not at the other spray site or check sites. No foliage was present at any site. The red oak buds at plot 1 and check 1 were beginning to break but tight at all other sites.

Each spray plot was treated at the rate of two ounces of actual insecticide per acre with a Bean mistblower. Weather conditions unexpectedly changed that night starting as a cold, heavy rain that turned into 15 inches of wet snow.

Ten days after spray application branches from all but the remote check area were cut and 50 buds from each examined and the larvae counted. Hatch was not yet complete at the remote check. (See Chart #1) Six days later all areas were resampled and all larvae counted. A marked decrease in larvae was seen at spray plot 1 and to a lesser degree at plot 2. Larvae on fifty leaves were again counted on the 16th, 22nd and 29th day after treatment

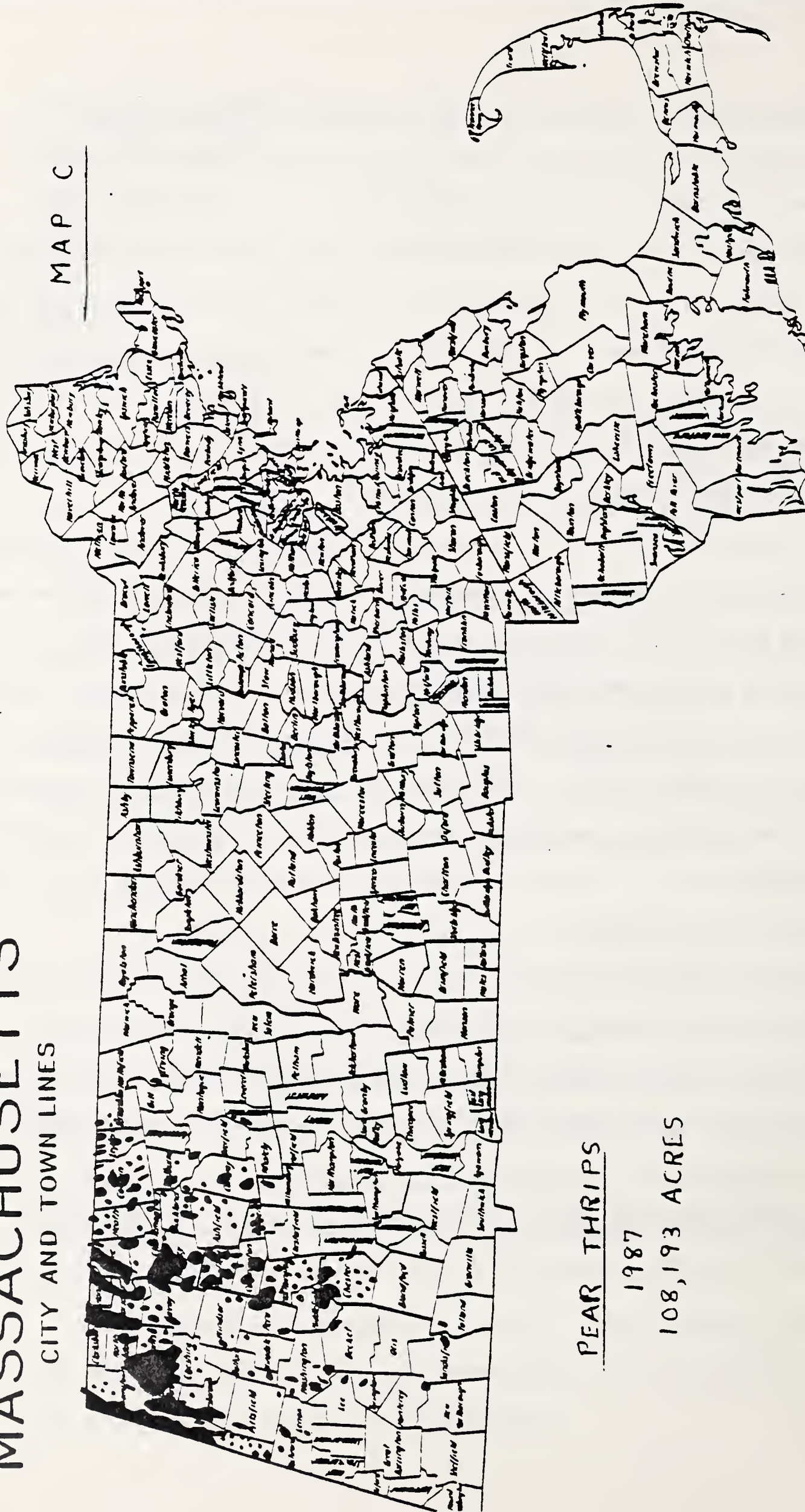
Excellent foliage protection was seen in both the treated areas, and the larval reduction was better in plot 1 than in plot 2. Egg hatch occurred shortly after spray application in area 1 and somewhat later in area 2. The exact date of hatch is unknown due to the areas being inaccessible because of snowfall.

It appears that the length of time available to spray for the control of this insect is greatly increased when this material is used.

MASSACHUSETTS

CITY AND TOWN LINES

MAP C



PEAR THRIPS

1987

108,193 ACRES

SCALE
1111111111
MILES

Chart #1

Plot	No. Larvae per 50 leaves			
	10 days Post Spray	16 days	22 days	29 days
1 spray	189	36	23	20
1 Check	394	171	221	206
2 spray	150	85	89	64
2 check	62	56	71	53
3 remote check	--	192	188	344

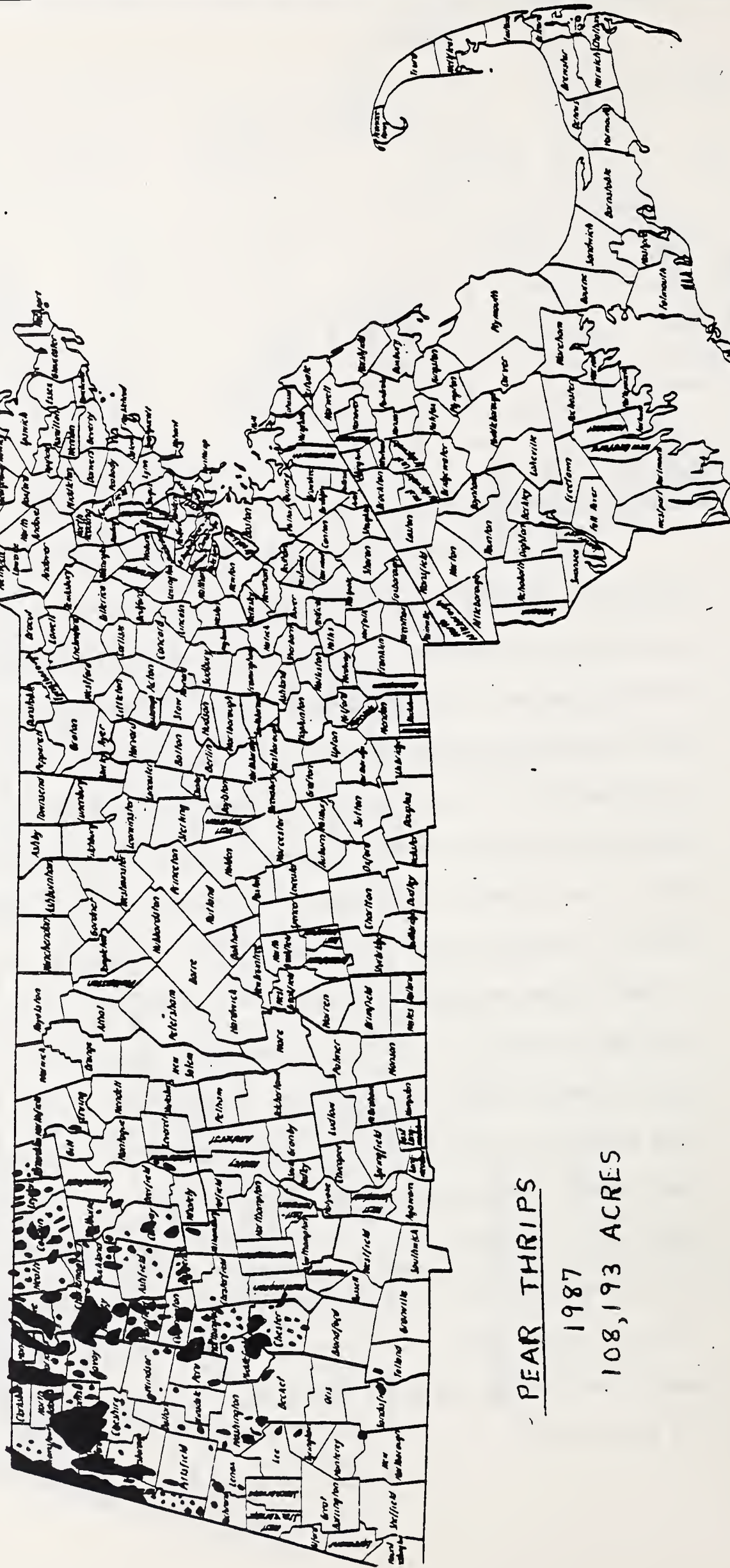
4. PEAR THRIPSTaeniothrips inconsegrans

Injury and defoliation of sugar maples along route 2 from Shelburne Falls to Williamstown was noted on 6-6-87. Several areas in Savoy and Charlemont and Hawley were ground checked on 6-10-87 by Bureau personnel. A leaf disease was suspected as the cause and leaf and twig samples were taken and delivered to the U.S. Forest laboratory in Durham N.H. for culturing. An aerial survey was then conducted to determine the extent of the problem. A total of 108,193 acres were found to be affected. (see Map C) That area is from eastern Franklin County to the New York border and south to Pittsfield. Ground checks of small areas in Wendell, Northfield and Bernardston found the same symptoms and injury as those further west. In addition these trees were currently being attacked by an unidentified insect. Samples were again taken and delivered to the U.S. Forest Service. These same insects were subsequently found in Savoy, Hawley and Charlemont. Pathologist James O'Brien, U.S. Forest Service reported that no fungus had cultured and that he suspected pear thrips as the cause of the original injury noted. The non-typical aphid found has now been identified through the forest service office as *Periphyllus Brevispinus* (no common name).

MASSACHUSETTS

CITY AND TOWN LINES

MAP C



PEAR THRIPS

1987

108,193 ACRES

SCALE
MILES

In a Cornell bulletin entitled "Sugar Maple and the Pear thrips" it is stated that the tiny black insects, thrips, could be responsible for the abnormal appearance (leaf Tatter) of sugar maple foliage. It further stated that recently, foresters in Pennsylvania associated the pear thrips with sugar maple leaf distortion and defoliation.

The injury is caused when thrips scrape and rasp tender plant tissues with their sharp, needle-like mouth parts to feed on plant liquids. Leaves damaged by the pear thrips are dwarfed, mottled yellow to green-brown and distorted.

5. OTHER INSECTS AND DISEASE OF INTEREST

A. Brown Tail Moth

This insect once found widespread over the Northeast is now concentrated on Cape Cod and on the Islands in Casco Bay in Maine. Most of the Cape population of this pest is our land under control of the Cape Cod National Seashore. They are continuing to spread from Provincetown to Wellfleet causing major concern regarding dune erosion and health problems. Some people contract a severe rash from the caterpillar hairs.

B. Oak Leaf Skeletonizer

This insect is a small moth: The caterpillar feeds on the surface of oak leaves leaving the veins of the leave untouched. It was reported this year as noticeable from Plymouth and Essex Counties west to the Connecticut River.

Most of the public's concern relative to this insect is not so much the feeding on the trees but the fact that when they are ready to pupate they spin down or silken threads. Their numbers are so great that it is difficult to walk under the tree without being

covered with them. Their habit of forming small, white, ribbed cocoons on almost anything including automobiles, lawn furniture, etc is also very annoying.

C. Dead and Dying Conifers

During the annual gypsy moth aerial survey dead and dying spruces were noted on 2,076 acres in Western Massachusetts in Hinsdale Peru, Windsor and Savoy. Gay Head also had dying conifers on 110 acres.

D. Japanese Beetle

Reports from the various district supervisors indicate that populations of Japanese Beetle are much heavier than usual. Its favorite foods include trees such as the little leaf linden, grapvines and rose bushes.

6. TREE CREW ACTIVITIES

The frustration continues. How to get the needed tree work done with old, out-dated equipment and a skeleton work force is a probelm facing the Bureau District Supervisors and the Regional Supervisors. It was answered in part this year by contracting to have the work done at Nickerson State Park, and hiring a bucket truck to be used by our own personnel at Otter River State Park.

At Nickerson, work which would have taken the two man crew assigned to Region 1 many weeks to accomplish was completed in a relatively few days by a contractor whose equipment would cut and remove whole trees in one motion. The whole trees would then be placed in a large chipper for easy removal.

At Otter River the three man, Region 3 crew, when give the use of a bucket truck, pruned and rendered less hazardous a total of 1064 trees in time to get the park open.

These two examples illustrate what needs to be done to maintain the

The tree population in our park system in a safe and pleasing condition
Meanwhile the short handed crews with their lack of modern equipment will
continue to keep up with the problem trees.

Many of the parks have a serious poison ivy problem. In order to
minimize the chance of visitors contracting the painful malady Bureau
personnel, particularly the tree crews, conduct a control pgoram. The
herbicide used is Roundup. The areas treated are those designated by the
park supervisors.

7. REPORT OF THE SHADE TREE ADVISORY COMMITTEE

Dated, March 1, 1987, the final report of the Shade Tree Advisory
Committee was delivered to Commissioner Gutensohn. The 1986 Annual Report
included the legislation which increased the responsibilities of the Bureau
(Chapter 765, Acts of 1985). It also included the names of the Committee
members chosen by the Commissioner to recommend ways to implement the
changes brought about by the legislation.

After a series of meeting the Chairman submitted the completed Report
to the Commissioner. The following are the Chairman's cover letter, the
Summary of Recommendations and the proposed Funding Methodology.

Cover letter

Summary of Recommendations

Funding Methodology

See Attached sheets



UNIVERSITY OF MASSACHUSETTS
AT AMHERST

Hills North
Amherst, MA 01003
(413) 545-2255

Department of Landscape Architecture
and Regional Planning

March 1, 1987

Commissioner James Gutensohn
Department of Environmental Management
225 Friend Street
Boston MA 02114

Dear Commissioner Gutensohn:

I am pleased to submit to you The Shade Tree Advisory Report of the Shade Tree Advisory Committee as per your request. This report is the consensus of the twenty-member Committee and outlines seven major recommendations.

It is the opinion of the Committee that implementation of these recommendations will not only bring the Shade Tree Division up to the professional standards of 1987 but also prepare the Division for the next decade. An important component of Chapter 765 is the expanded role of the Department of Environmental Management in all of Massachusetts' cities and towns. The Committee in consultation with the Mass. Tree Wardens and Foresters Association has outlined a means by which the D.E.M. can improve the safety of municipalities and also add to their long-term beauty through the proper management of our shade tree resource.

The Shade Tree Advisory Committee in cooperation with D.E.M. and other interested parties would like to assist you in obtaining the necessary funding.

Working with you, the D.E.M. staff and the Committee members has been a sincere pleasure. If I can be of further service to you and the D.E.M. please do not hesitate to ask.

Sincerely,

H. Dennis P. Ryan, III
Chairman, Shade Tree Advisory Committee

HDR:jl

SUMMARY OF RECOMMENDATIONS

1. The Committee recommends a restructuring of the existing Bureau of Insect Pest Control to include new staff with appropriate qualifications to respond to the mandate of Chapter 765.
2. The Committee recommends the addition of one new D.E.M. tree crew, that existing crews be brought up to full strength, and the equipping of all crews in accordance with current professional standards.
3. The Committee recommends that D.E.M. develop a mechanism for the use of outside contractors on specific arboricultural projects.
4. The upgrading of professional qualifications for tree wardens will improve every aspect of shade tree management activities. The Committee recommends that D.E.M. encourage and support higher standards for the tree warden position and also support the combining of the tree warden position and the local superintendent of shade tree management and pest control into one position.

5. The Committee recommends that D.E.M. initiate a legislated funding mechanism to provide a permanent source of funds to reimburse cities and towns for shade tree activities.

6. The Committee recommends that D.E.M. initiate a program of educational and technical assistance to cities and towns and work in cooperation with the University Extension Service on these activities.

7. The Committee recommends that a permanent shade tree advisory committee be appointed to advise the Commissioner and the Bureau on relevant issues of planning and development.

FUNDING METHODOLOGY

The Shade Tree Advisory Committee recognizes that the future of shade tree management in the Commonwealth depends on highly qualified professionals, a predictable source of funding, and strong public support. Long term planning and management is essential to a healthy and constantly replenished shade tree resource. The Committee recommends the following funding mechanisms to implement the recommendations in this report:

1. NEED: Additional D.E.M. staff and equipment for shade tree work on D.E.M. properties.

POTENTIAL SOURCE OF FUNDS: Some percentage of the revenue generated by the Division of Forests and Parks through the sale of wood and forest products on lands within the state forest and park system and revenue generated by the wood products business management training program as stated in pending legislation "Massachusetts Forests Wood Products Mature Industry Assistance Program."

2. NEED: Safety pruning and hazardous tree removal on D.E.M. properties.

POTENTIAL SOURCE OF FUNDS: \$1 million 10 year capital bond

3. NEED: Fund to reimburse municipalities for shade tree activities.

POTENTIAL SOURCE OF FUNDS: 2% of existing 5% sales tax on retail sales of nursery stock and garden center products.

MISCELLANEOUS

Fred Hayward resigned his position as District Supervisor of District 8, Berkshire County, to take a position with Northeast Utilities.

Stan Hood retired from his position of Chief Superintendent at the end of the year.

Ed Budnik was elected President of the Massachusetts Tree Wardens and Foresters Association at the Annual Meeting held in February at Kings Grant in Danvers.

Dick Kelliher represented the Department at the Annual Gypsy Moth Review held in December at Norfolk, Virginia. He gave a report on our current gypsy moth conditions.

Various Bureau personnel also attended the following meetings:

- ° Massachusetts Tree Wardens and Foresters Annual Meeting in Danvers.
- ° Tree Warden, Arborist and Utilities Annual Conference in Chicopee.
- ° Northeastern Forest Pest Council Annual Meeting in Albany, N.Y.
- ° Northeastern Forest Insect Work Conference in Albany, N.Y.
- ° Southeastern Massachusetts Tree Wardens Association.
- ° Worcester County Tree Wardens, Foresters and Moth Superintendents Association.
- ° Forest Pest Managers State Cooperative Workshop in Durham, N.H.
- ° Yankee Forest Cooperative in Chepachet, R.I.
- ° Workshop on Diagnosing Shade Tree Problems at the Suburban Experiment Station in Waltham.



ANNUAL REPORT
FISCAL YEAR 1987
BUREAU OF FIRE CONTROL
ANTONIO CASTRO CHIEF FIRE WARDEN

INTRODUCTION

1987 has been an eventful year for the Bureau of Fire Control. However, the total number of fires reported would belie this fact. A wet spring has reduced the number of forest fires in the Commonwealth.

Of special note is the acquisition of two new power wagons and four patrol trucks to replace vehicles that average 23 years of age.

There were personnel changes due to promotions and retirements and the acquisition of two patrolmen positions for the Counties of Hampden and Franklin. There were changes in our tower and truck helper positions throughout the state that were precipitated by the issuance of civil service certified lists for those positions. In most instances our provisional appointees were reachable and the anticipated severe loss of experienced personnel did not materialize.

Classes were held in Sudbury at the Fire Academy and at U Mass at Amherst to train our personnel for qualifications for red card certification. Twenty fire employees are now red carded and another twenty need to pass their stress test to receive their red card.

Legislation to permit the department to enter into an agreement with the National Forest Service is closer to passage and there is great hope that this will be the year for endorsement.

PREVENTION

The Bureau of Fire Control personnel received many requests to visit elementary schools throughout the year. With Smokey in attendance our personnel presented many programs pertaining to fire prevention in an educational atmosphere. This program has proven very beneficial while instilling in youngsters the practice of fire prevention at a most critical stage of their inquisitive development.

Smokey has played a major role in reducing forest fires over the past 42 years. In 1942 more than 10 million acres of our woodland were burned or destroyed. In 1983 only 3 million acres were reported burned. This was a savings to the American people of over 20 billion dollars.

In Fiscal 1987 Smokey Prevention Programs were administered in every Bureau district in the state. We were able to reach approximately 24,230 young elementary school children. We disseminated over \$80,000 dollars worth of Smokey Bear prevention material. Our programs were also administered to older citizens and community functions. Smokey still provides a great deal of excitement at parades and community functions.

Another important prevention program is the issuing of criminal citations and warnings to individuals in violation of the Massachusetts Forest Fire Rules and Regulations and M.G.L. Chapter 132 pertaining to Forest Cutting Practices. We issued 185 citations and warnings in Fiscal 1986. District 10 in Hampshire County issued 42 Chapter 132 violation warnings and 38 fire law violation warnings, 23 were prosecuted.

The inspection of logging operations takes up a great deal of the District Fire warden's and Forest Fire Patrolman's work day. The new Forest Cutting Practices Law has increased the responsibility of these key personnel. In Fiscal 1986, we had 3,381 logging operations. This past year we inspected 2,622 logging sites. District 10 (708 inspections) District 7 (461 inspections) District 12 (383 inspections) and District 9 had (296 inspections).

There has been a decrease in cutting practice violations because the loggers have adjusted to the new cutting practice law. This of course reflects on a very conscientious effort by the Bureau personnel in educating the loggers to obey the letter of the law. The inspection system serves a two fold purpose; it establishes uniform fire minimizing standards with loggers; it also familiarizes our fire personnel with specific fuel conditions and terrain they might not ordinarily be familiar with.

Fire Prevention Week:

During Fire Prevention week in October the Bureau prevention team with Smokey Bear play a very important role by coordinating fire prevention activities with many cities and towns in the Commonwealth. Attending fire prevention programs in schools, elderly housing units, parades and distribution of Smokey Bear prevention materials.

The Big "E"

Every fall during the Big "E" fair in W. Springfield Smokey's presence has always played a major role in the Department exhibit area. Every fire district in the state contributes a certain amount of effort with Smokey in order to make this a very special event. Hundreds of thousands of people from all over New England gather to view this exhibit.

New England Telephone Safety Fair

New England Telephone sponsored a safety fair in Braintree this past June and once again Smokey played a major role. Fire personnel from District 4 put on a great demonstration. The Bureau and Smokey has been invited to attend another N.E.T. affair in Boston late September of this year.

SMOKEY BEAR POSTER CONTEST

The Bureau of Fire Control in cooperation with the Massachusetts Federated Garden Club conduct a Smokey Poster Contest throughout the state's many school departments. Over 1500 youngsters from kindergarten through high school grades compete for four awards. Also included are participants in the adult and senior citizens category. Winners selected in Massachusetts compete in Regional and National competition.

The highlight to being one of the six category winners is a visit with the Governor at the State House. Children and their parents and grandparents have a rare opportunity to meet the Governor and Smokey Bear. The contestants receive citations and awards commemorating their winning poster. In order to attract youngsters in the junior and senior high schools the Department presents a \$50.00 savings bond to the 4 children category winners. The Governor also reads a proclamation in Smokey's honor for that day.

Due to the absence of the Governor, Lt. Governor Evelyn Murphy presented the awards on May 18, 1987.

Smokey's presence with the Governor each spring in passing out awards and citations has always proven to be one of the most successful methods in promoting Smokey's Forest Fire Prevention Program. Each year more Garden Clubs and school children are participating and spreading Smokey's fire prevention message.

1987 Poster Winners:

Kindergarten - 2nd Grade: Jonathan Hofeller, High Rock School, Needham

3rd - 5th Grade: Melissa Hofeller, High Rock School, Needham

6th - 8th Grade: Amy Glynn, Norfolk County Jr. High

9th - 12th Grade: Adam Burke, Plymouth Carver High School

Adult: Gen Groeppe, Waltham, MA

Sr. Citizen: Beulah Di Poli, Needham, MA

Mrs. Mary Etta Goes, Bolton Junior Garden Club was the Massachusetts Federated Garden Club Smokey Bear Poster Contest Chairperson.

TRAINING

The training of Bureau personnel is an ongoing program within the individual fire districts to sharpen the skills and improve the fire behavior knowledge of the year-round and seasonal personnel. Training sessions have also been conducted inter-district to familiarize personnel with specialized equipment, fuel load and/or topographic characteristics that may vary from one district to another. This past fiscal year the Bureau had 424 in-house training sessions and 103 training sessions with other bureaus and rural fire districts.

Statewide training was instituted for Division personnel to qualify them as inter and intra state fire fighting crews. Instructors were drawn from the Department's branches utilizing their expertise wherever called for in the lesson plans of the Basic Firefighter and Fire Behavior courses.

The Bureau of Fire Control in conjunction with the United States Forest Fire Service and its northeast neighbors attended various conferences, seminars and training sessions during the past fiscal year.

Smokey Bear Pro Sports Seminar

On April 20 and 21st, the Assistant Chief Fire Warden attended a training seminar in Columbus Ohio in which 26 Major League baseball teams will conduct a Smokey Bear Day at their respective parks through out the United States and Canada to promote Smokey's Forest Fire Prevention Program. On August 25th at Fenway Park in Boston, Smokey will be honored with ceremonies at home plate. Smokey will have the honor of throwing out the first ball prior to the Red Sox vs. White Sox Baseball game. Baseball cards with players pictures and Smokey's prevention messages will be distributed to all patrons enter the park that day.

Fire Protection ,Economic Analysis Workshop

The U.S. Forest Service in cooperation with the Minnesota Department of Natural Resources sponsored a advance computer workshop for state and federal personnel preparing a ten year forest fire economical analysis mandated by the Forest Service in order to continue receiving federal monies for the protection of our forest lands. The Assistant Chief Fire Warden attended this intensive computer data training seminar on February 22-27th in St. Paul, Minnesota. This cost analysis must be completed in 1987.

Woodland Fire Fighting Safety Training Program

The Bureau, in cooperation with the Massachusetts Fire Academy in Sudbury have completed a 45 minute forest fire safety training slide presentation which will benefit all fire departments in the state. This training slide presentation will aid many communities in the proper handling of forest fire vehicles, tools, equipment and proper attire in fighting forest fires.

Water Handling and Pump Training Course:

On September 3 and 4 at the Wachusetts Mountain State Park, the Bureau put on a water handling and pump training course for all fire district personnel. The main objective of this training course was to familarize fire personnel who normally man our fire trucks and pumps to acquire the knowledge of pumping water great distances. The training session was intended to define any weakness, or strengths in our fire suppression capabilities. Only trucks, equipment and hose we normally use were allowed at this training exercise.

The morning session involved hydraulic pump knowledge and water delivery demonstrations. It took three hours during the afternoon hands on water pumping drill in order to get 25 gal. per minute of water 800 ft. up the side of the mountain to the summit. Over 15,000 ft. of hose was used in a relay system

that also used 7 Harodike Collapsible water tanks and pumps to achieve their objective.

It was a remarkable feat considering at a Compact Water Handling Training session held at Mt. Mansfield in Vermont, with the use of New Mark III pumps, water never reached the summit during their exercise.

Red Card and Green Card Certification

The Bureau invited 80 department personnel to two different training sessions in order to certify 20 man crews to fight forest fires with U.S. Forest Fire personnel wherever in the country they may be needed. This is referred to as "Red Carding". Most of the states in the Northeastern Compact have these 20 man crews available when called upon to deploy same. House Bill #1175 now pending in the legislature will give us the authority to send trained red carded personnel to the western fires when called upon. Training sessions were held at the Mass Fire Academy March 9, 10, and 11th, and at U Mass Amherst March 23, 24 and 25. David Crary, a qualified federal forest fire instructor administered both courses. Twenty-five departmental personnel have qualified and been certified. This included passing the written and physical tests requirements. By passing the federal red card standard these same personnel are also "Green Carded" for "Compact" fire fighting participation.

DETECTION

The detection system in Massachusetts is still provided by a combination of aerial observation and ground observation stations. In the counties east of Worcester County, ground observation stations are maintained and operated by the Commonwealth. This system is backed up during periods of high fire danger in Plymouth and Barnstable Counties by county supported planes. In the western counties and including North Worcester County, a combination of ground observation and aerial observation is utilized and supported entirely

by the state.

The past flight pattern for DEM, Region III, South Worcester County, has been eliminated in order to increase the frequency of aerial detection flights over Northern Worcester County which has a high forest fire frequency. There were two additional towers manned in South Worcester County in order to shorten flight patterns. Flight patterns #3 limitations include West Boylston to Fitchburg, northwest to Royalston, and south to Hardwick, all in the Northern Worcester County area.

Flight pattern #4 in Franklin, Hampshire and Hamden Counties, DEM, Region IV has been similarly condensed from an "A" type aerial flight pattern to a rectangular flight pattern. This extends from Russell in Hamden County, north to Leyden in Franklin County, and proceeds south to Blandford in Hampden County.

Flight pattern #5 in Berkshire County, DEM, Region V, remains the same as in the past. From New Marlboro, north to Clarksburg, northwest to Williamstown, it then proceeds south to Sheffield. On extreme fire danger days, a fourth flight pattern will be activated between Northern Worcester County and the existing flight pattern in Region IV. This in effect will give us the maximum forest wildfire protection for our woodlands.

We spend considerable time training fire tower observers to pinpoint the exact location of fires. This vital information is relayed to the rural fire dispatchers who in turn activate the suppression forces in their particular town.

The Bureau plays a very important role in assisting many small rural communities in all types of wildfire training. Immediate detection and response to incipient wildfires contributes to the reduction of acres burned and property lost.

In keeping with Director Bliss' request for sustained patrol activity, the Bureau's Forest Fire Patrolman have logged a total of 435,029 miles. This reflects a decrease in patrolling activity of 63,296 miles from fiscal 1986. The decrease

in patrolling can be attributed to an inactive fall and spring fire seasons.

Fire Tower Detection

The state is divided into 13 fire districts. Forty-three Fire Observation Towers are located throughout these districts. Our Tower observers offer the rural fire communities an invaluable asset in detecting forest fires immediately after ignition. This past fiscal year our tower observers detected 863 forest fires. Fire reported by communities totaled 2,190 forest fires. Our detection of fires this past fiscal year decreased due to a mild fall and spring fire incident season. Immediate detection of forest fires and rapid reporting procedures to rural communities is a valuable asset in the reduction of loss of life, property and valuable forest resources.

A new fire tower has been constructed at Myles Standish State Forest to replace our old tower. This tower should be in operation in fiscal 1988.

SUPPRESSION

The Bureau is mandated by law to assist rural fire communities in the suppression of wild fires. On many occasions during multi-alarm fires, our personnel not only assist in the suppression of wild fires but also will man fire stations to assist in dispatching fire information to other towns if the need arises.

Our fire tower detection system relays to the rural towns exact locations of fires detected which creates an immediate response situation to the emergency. This immediate response of fire apparatus to the scene minimizes the danger to lives and property.

The following fire statistics reflect the important role the Bureau plays in the overall scope of detecting and suppression of wild fires in the Commonwealth. Without the Bureau's professional fire fighting assistance to the many cities and towns in the Commonwealth the loss of valuable forest and timber products would be staggering. Other routine functions were also performed in conjunction with suppression activities.

Fiscal 1987

Fires Detected by Towers	863
Fire Reported	2,190
Acres Burned	3,418
Miles Patrolled	435,029
Assists to Cities and Towns	389

<u>Fire Classifications</u>	<u>Fires</u>
A. .25 acres or less	1,983
B. .26 acres to 9.9 acres	901
C. 100 acres to 99.9 acres	25
D. 100 acres to 299.9 acres	1
E. 300 acres to 999.9 acres	2
F. 1000 acres to 4999.9 acres	.
G. 5000 acres to more	
Total Class Fires	<u>2,912</u>

* See Charts for fire trends

PRESUPPRESSION - CONSTRUCTION - MAINTENANCE

Each year our construction crew headquartered in Brimfield performs many tasks in restructuring fire towers, cabin, telephone and power lines. This year was no exception. Twelve fire towers had work performed on them. The crew's expertise in all phases of construction activity is invaluable.

The following schedule indicates work performed in the various counties where our towers are located:

<u>TOWER</u>	<u>COUNTY</u>	<u>WORK PERFORMED</u>
Wellfleet	Barnstable	Old cabin replaced with new vinyl structure and sliding glass windows
Brewster	Barnstable	Powerline repair and installed antenna

<u>TOWERS</u>	<u>COUNTY</u>	<u>WORK PERFORMED</u>
Bourne Bridge	Barnstable	New antenna installed for repeater.
Kingston Tower	Plymouth	Roof repair on cabin.
Plymouth	Plymouth	Repair tower footings. Removed county and state antennas.
Martha's Vineyard	Dukes	New antenna brackets - New duplex for channels - Rehabilitated cabin.
Chelmsford	Middlesex	Rehabilitated powerline
Westboro	Worcester	Rebuild fence - Repaired vandalism damage.
West Brookfield	Worcester	Repaired vandalism damages.
Princeton	Worcester	Fence repair. New antenna cable for repeater. Worked on powerline to tower.
Warwick	Franklin	Installed new roof on cabin - Remove antennas.
Windsor DPW Tower	Berkshire	Installed new micro-wave antennas.

FOREST & PARK MAINTENANCE

The fire construction crew spent many manhours on many other division facilities: without their expertise in all phases of construction and rehabilitation work the cost to accomplish this work would be beyond budgetary limits.

REGION I

<u>LOCATION</u>	<u>COUNTY</u>	<u>WORK PERFORMED</u>
Scusset Beach	Barnstable	Powerline repair. Installed antenna
Myles Standish S.P.	Barnstable	Installed new weather instruments.
Nickerson S.P.	Barnstable	Powerline repair. Installed antenna.

REGION II

Walden Pond	Middlesex	Wired new residence bldg.
Carlisle Hdqtrs.	Middlesex	Installed all new wiring.
Cochituate S.P.	Middlesex	Wired electrical panel at comfort station.

REGION II

<u>LOCATION</u>	<u>COUNTY</u>	<u>WORKED PERFORMED</u>
Maudslay S.P.	Essex	New wiring in Hdqtrs. building. Powerline repaired.
Harold Parker S.P.	Essex	Powerline repair in campground & Picnic area.

REGION III

Otter River S.P.	Worcester	Installed new weather instruments.
Douglas S.P.	Worcester	Powerline repairs
Upton S.Y.	Worcester	Base radio installation. Mounted antenna on horse barn.
Westboro Rink Hdqtrs.	Worcester	Worked on electrical wiring for heat.

REGION IV

Hawley S. P.	Franklin	Installed new antenna
Erving S.P.	Franklin	Rewired maintenance garage. Rewired Hdqtrs. Bldg. plus new fixtures.
Mohawk S.P.	Franklin	Repaired powrline
Sugarloaf Mt. Res.	Franklin	Powerline repair. Repaired signal wire for water pump. Photovoltaic panels repaired.
D.A.R. S.P	Hampshire	Powerlines and telephone lines repaired Installed guy wire poles.
Robinson S.P.	Hampden	Installed 1,000 feet of telephone line Installed poles. Powerline repair.
Granville	Hampden	Installed antenna and cable wire.
Chicopee S.P.	Hampden	Installed new lights at Hdqtrs. Bldg.
Brimfield S.P.	Hampden	Rewired carpenter shop electrical system. Powerline repair.
Tolland S.P.	Hampden	Electrical Wire repair.
Holyoke Heritage	Hampden	Welding Heritage S.P.
Rinks & Pools State Area	Hampden	Installed new Metal ladders in all pools.

REGION V

<u>LOCATION</u>	<u>COUNTY</u>	<u>WORK PERFORMED</u>
Pittsfield S.P.	Berkshire	Installed new weather instruments.

The construction crew of John Matroni, forman; Gary Faulkins, Dick Riberdy and Bill Cloran also traveled extensively throughout the state to inspect tower sites and inventoried future construction and rehabilitation projects. They also visited state swimming pools to inspect all metal ladders.

ASSISTANCE TO OTHER BUREAUS:

The Bureau of Fire Control fire personnel assisted other Department Bureaus in many phases of park related activities. According to Bureau statistics 25,430 manhours were performed assisting other Bureaus in the Division of Forests and Parks. On a monthly average 2,119 manhours is spent on work projects other than Bureau's work assignment. A monthly average of 424 manhours of labor is performed in each region in our system. Cooperation within the Division by the Bureau of Fire Control has to add to the Bureau's wide expertise in all kinds of work projects it is asked to performed.

ROAD AND FIRE LANE MAINTENANCE

Each year our fire personnel are required to maintained roads and fire lanes in all state owned lands. Fire ponds are also maintained as a source of water supply during suppression activities. This past fiscal year we maintained 205 miles of fire access roads.

NORTHEASTERN FOREST FIRE PROTECTION COMMISSION (COMPACT)

The Northeastern Interstate Forest Fire Protection Compact Public Law #219 - 81st Congress was passed to promote effective prevention and control of forest fires in the northeastern region of the United States and adjacent areas in Canada by maintenance of adequate forest fire fighting services by

member states and by providing for mutual aid in fighting forest fires. This law was approved by Congress in 1949. It was designated as "The Northeastern Forest Fire Protection Commission" (Compact)

The COMPACT is governed by three Commissioners from each state and the provinces of Quebec and New Brunswick who appoint an Executive Director who will perform all the duties customarily performed by a secretary and a treasurer. There are three standing committees designated: Operations Committee (Fire Supervisors), Training Committee and Equipment Committee. Each standing committee shall have one representative from each compact member state.

Committees shall meet not less than once per year and shall present a report of its activities to the annual meeting of the Commissioners held every July.

The COMPACT is comprised of fire personnel from Massachusetts, Connecticut, Rhode Island, New York, Vermont, New Hampshire, Maine and the Provinces of Quebec and New Brunswick from neighboring Canada.

Each year COMPACT holds a training seminar in New Hampshire to instruct COMPACT crews in the latest advances in forest fire control and how to react to inter and intra state emergencies.

Compact Winter Training

This year COMPACT winter training seminar was held in Bedford, N.H., on February 2nd through the 5th. This year's training theme stressed Physical Fitness and Fireline Survival. In attendance was the Chief and Assistant Chief Fire Warden and all the District Fire Wardens.

The program stressed the importance of establishing a physical fitness program for fire personnel engaged in fighting forest fires. Also, lectures and slide presentations were delivered on the danger of carbon monoxide gases and fighting forest fires in the vicinity of transmission lines in the forest areas. Chain saw use and chain saw safety highlighted the program.

Operations Committee:

Massachusetts is represented on this committee by Chief Fire Warden Castro. The State of Rhode Island hosted the committee meeting July 5, 6, 1987 in Providence. Emphasis was placed on types of equipment and equipment inspection procedures. The equipment committee members demonstrated pumping techniques with various types of pumps.

The Operations Committee makes its recommendations to the COMPACT Commissioners for its future recommendations.

Training Committee

Massachusetts is represented in this Committee by District Fire Warden Joe Sakaske from District 11 in Hampden County.

July 29-31, 1986 - Committee met in Manchester, VT. with COMPACT Commissioners to formulate plans for annual COMPACT Training meeting in February.

September 8, 1987 - Emmitsburg, Maryland, National Fire Training Academy. Mid-Atlantic COMPACT meeting. (chain saw safety, "theme" Fire-line Safety)

October 15, 1986 - Concord, N.H. program work for February training session.

January 27, 1986 - Concord, N.H. program meeting for annual training.

March 5, 1987 - Rutland, VT. Formulate training for summer COMPACT training session.

March 9,10,11,1987 - Bar Harbor, Maine, S-260 course training for Fire Business Mgnt. hosted by the U.S. Forest Service.

March 23, 1987 - Springfield, VT. COMPACT Mgnt. summer session program.

March 30,31,1987 - Milwaukee, Wis. U.S. Forest Service Mgnt. Series for COMPACT training needs.

June 15,16,17, 1987 - Prescribe burn summer training session. Burlington, VT.

Equipment Committee

Massachusetts is represented on this committee by District #8 Fire Warden Philip Moulton. This committee is responsible for the inventory of all fire equipment and vehicles. Each year the equipment committee meet several times through out the COMPACT state regions and makes recommendations to the Operations Committee 085

on the status of all forest fire equipment and vehicles. This year the committee met at Dunfy Air Base, upper Blackville, New Brunswick; Canada. The meeting stressed Mini Equipment Call up and testing. Another meeting was held in Burlington, Vermont, dealing with a Prescribe Burn Workshop.

Prevention Committee

Massachusetts is represented on this committee by William CARE, District #9 Fire Warden. This committee is responsible in formulating forest fire prevention programs for the COMPACT and makes its recommendations to the Operations Committee.

The Prevention Committee was recently commissioneed by COMPACT, William Care was named chairman. This committee was charged with examining fire causes and public service announcements in dealing with all fire prevention messages. Their first meeting was held in Bedford, New Hampshire on February 2-5th 1987, each member state and the provinces of Quebec and New Brunswick have representation on this committee.

MASSACHUSETTS FOREST FIRE COUNCIL

The Massachusetts Forest Fire Council has proven to be a very important organization to the Bureau of Fire Control. The Council has representation from every forest fire association in the Commonwealth. The Council meets quarterly to discuss important forest fire techniques and procedures.

A progress report is presented to the Council by the Chief Fire Warden during these sessions. By statute the Bureau has the responsibility to assist all fire communities in all related detection, prevention, pre-suppression and suppression activities.

The following organizations have delegates who attend these quarterly meetings:

MASSACHUSETTS FOREST FIRE COUNCIL cont

Barnstable County Fire Chiefs Association

Cape Cod Foresters and Firefighters Association

Plymouth County Forest Wardens and Firefighters Association

Bristol County Forest Wardens and Firefighters Association

Norfolk County Firefighters and Wardens Association

Essex County Fire Wardens Association

Blackstone Valley Forestry Association

Quabog Mutual Aid Association

Worcester WEst Forest Wardens ASsociation

Western Mass. Forest Wardens Association

Berkshire County Forest Wardens Association

Members also include the Director of Forests and Parks, Regional Forests and Parks Supervisors, District Fire Wardens and Patrolmen, Rural Fire Department Fire Chiefs, Forest Wardens and the Director of Air Quality Control, DEQE.

Massachusetts Economic Fire Management Analysis

Draft Report

August 1987

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- EXECUTIVE SUMMARY -

In order to meet state wildfire program objectives there is a need for information on the effectiveness and efficiency of current management policies and of possible alternatives. The U.S.D.A. Forest Service developed a computer program, FIREPLAN-Initial Action Assessment (FPL-IAA), to assess the effectiveness and efficiency of fire management programs by assessing program costs plus net value change of resources (C+NVC). The Fire Management Analysis and Planning Handbook defines an efficient program as one that minimizes total C+NVC. An effective program is one that will result in minimum emergency suppression costs while limiting (negative) net value change of resources. In this analysis the computer program was used to:

- 1) Quantify costs and benefits of the fire protection organization at various state budget levels.
- 2) Determine the importance of Department of Environmental Management (DEM) Bureau of Fire Control (BFC) services to the towns.
- 3) Evaluate the excess property program.
- 4) Quantify the economic significance of the rural-urban interface fire problem.

The state was divided into six analysis zones using historic fire weather data and forest cover type information (Figure 1). Data gathered for the base period 1975-1984 includes: temperature, humidity, precipitation and wind readings from four fire weather stations; fire history records; Bureau of Fire Control budget information (Table 3); organizational information with respect to prevention, detection and suppression; and values of forest, wildlife, recreation and agricultural resources plus improvements that could potentially be affected by fire.

Data were tabulated and entered into a microcomputer for analysis. The microcomputer version of the Forest Service program (MNIAA3) simulates fires at chosen locations and dispatches crews/equipment to suppress the fires. The objective of an initial calibration run is to match acreage burned in the model with historical values (i.e. from fire history records). Once the model is calibrated, the base data can be manipulated to determine possible consequences of budget or organizational changes.

In fiscal year 1983, nearly 90% of the funds were either in 01 and 02 subcontracts or in salaried positions (Table 3). The most likely scenario, therefore, for a 10% or 20% budget reduction would be a combination of reductions in salaried positions. Reductions in personnel would affect prevention, detection and suppression. The effects can be simulated by changing the following inputs to the computer program: increase number of fires (prevention); increase average fire size at discovery (detection); decrease fire line production rates of crews/equipment (suppression).

The most frequently stated concern of district fire wardens is a lack of human resources. For the 10% and 20% budget increase examples, human resources were added to make 'full crews' as described by the fire wardens. In addition, new vehicles were added in several locations.

The results of the 10% and 20% budget increments are displayed in Figure 2. The most efficient budget level (i.e. lowest C+NVC) in this case is the 10% increase. The values that go into C+NVC include the Bureau of Fire Control fixed fire protection (FFP) costs, emergency suppression (ES) costs and net value change of resources (NVC). The personnel and equipment changes described in detail in the Results and Discussion section are only examples of many possible alternatives.

The Central Hardwood Zone (Zone 2) was used to demonstrate the consequences of extreme budget changes at either end of the spectrum. In one option, all aspects of the state fire organization are increased two-fold and crews/equipment dispatched as if the state had first-responder status (town fire departments currently have that responsibility). At the other extreme, the state suppression forces are cut completely leaving only fire tower operation (i.e. detection) in the budget. The results of the analysis are displayed in Figure 3. The most efficient (i.e. lowest C+NVC) program is with towers only due to the large decrease in fixed state budget. However, when the state is given first responder status, the town emergency suppression costs (ES) could be reduced by more than 80%, and resources destroyed or damaged by wildfire could be decreased by more than 25%.

The Transition Hardwood Zone (Zone 3) was used to assess the effectiveness of the excess property program. The analysis suggests that emergency suppression costs (ES) and resources destroyed or damaged by wildfire could be 10% to 15% greater if the excess property vehicles presently in operation were not available (Figure 4).

There is an increasing problem in Massachusetts with house construction in the midst of fire-prone vegetation types. Improvement values for the Brushbreaker Zone (Zone 1) were modified to reflect potential losses rather than historic losses, given modern population distributions and historic fire occurrence patterns. This analysis allows us to quantify the property-value aspect of the rural-urban interface fire problem.

This initial analysis should stimulate ideas concerning future use of the program. The data base can be easily modified to assess the effectiveness of potential organizational changes or to model the consequences of hypothetical situations. Comments and suggestions from Bureau of Fire Control and other Department of Environmental Management personnel are essential to the success of the analysis.

Future analyses could be executed more efficiently with the following changes:

- 1) A more complete record of fires should be kept including who reported the fire and at what time. The fire record sheets have spaces designated for this information, but it is often not provided by the towns. The effectiveness of the fire towers can be more readily quantified if we have accurate detection data. The time of detection in combination with arrival times of vehicles will help in setting up more accurate dispatch lists for this program. The location of fires should also be recorded, at least to the point of describing whether the fire occurred in a state forest or park, on town, private or federal land, and in what fuel type.
- 2) It would also be helpful to know at which fires the state forces provided assistance, and to have town and state emergency suppression costs separated in the monthly fire reports.
- 3) The fire district's monthly activity reports could separate patrol versus emergency suppression mileage for patrol trucks and also report suppression mileage for trucks not covered under patrol miles.

FEDERAL EXCESS PROPERTY PROGRAM

The Federal Government authorized the United States Forest Service to enter into an agreement with the Commonwealth of Massachusetts and its designee, the Department of Environmental Management, Bureau of Fire Control, to administer the Excess Property "Pass Through" Program. This program has generated a tremendous amount of interest from the rural fire communities in the Commonwealth.

Since the inception of the program in November of 1980, 19 rural communities have entered into agreements with the Bureau of Fire Control to accept federal excess property under the terms set forth by the U.S. Forest Fire Service, the General Service Administration, and the Massachusetts Bureau of Fire Control. This reflects an increase of 8 communities from fiscal year 1986.

In Fiscal 1987 excess property from the federal government was in heavy demand by the rural fire communities to every county. Communities who acquired property put a tremendous amount of effort in rehabilitating the same. Tank trucks, fire trucks, pick-up trucks and generators were beyond many small communities economic goals. These same pieces of property could not be purchased new by the towns because of budget restraints.

By acquisition through the "Pass Through" Program many communities were able to fulfill the fire protection needs that the towns people demanded at no cost to the particular town.

The following communities have received federal excess property vehicles in fiscal '87:

REGION I			
<u>Fire Communities</u>	<u>County</u>	<u>Vehicle</u>	<u>Value</u>
Bourne	Barnstable	1972 5 ton Int. Harvester truck Tractor	\$3,853.00
Lakeville	Plymouth	1973 2 ton Stake Truck with Aerial Lift	\$20,249.00
Marshfield	Plymouth	1975 Chevrolet Step Van	\$10,843.00
REGION III			
Princeton	N. Worcester	1974 Chevy Pick-up	\$ 5,454.00
Rutland	N. Worcester	1972 Dodge Aircraft Refueling Truck	\$13,500.00
Winchendon	N. Worcester	1977 Chevy Pick-up	\$ 4,125.00
Webster	S. Worcester	1978 Ford Station Wagon	\$ 8,000.00
Brookfield	S. Worcester	1974 Dodge Pick-up	\$ 8,696.00

REGION IV

<u>Fire Community</u>	<u>County</u>	<u>Vehicle</u>	<u>Value</u>
West Hampton	Hampshire	1977 Dodge Pick-up	\$6,190.00
South Hampton	Hampshire	1968 Willy's Ambulance	\$5,025.00
Plainfield	Hampshire	Road Grader Caterpillar	\$129,684.00
Wendell	Franklin	1972 GMC Fire Truck	\$105,329.00
Charlemont	Franklin	1977 Int. Harvester Tanker	38,690.00
Shelburne	Franklin	1978 Dodge Crew Cab	\$6,190.00
Lake Pleasant	Franklin	1972 Int. Harvester Tanker	13,200.00
Orange	Franklin	1978 Dodge Crew Cab	\$6,190.00

Vehicles Acquired for Department Use.

REGION I

<u>Area</u>	<u>Vehicle</u>	<u>Value</u>
Horseneck Beach S.B.	1968 Willy's Ambulance	\$5,025.00
Myles Standish S.P.	1978 Plymouth Sedan	\$7,284.00
Shawme Crowell S.P.Fire	1979 Dodge Pick-up	\$4,169.00
Myles Standish S.P.	1980 Honda Civic	\$5,000.00
Myles Standish S.P.	1975 Dodge Carry All	\$5,550.00

REGION II

<u>Area</u>	<u>Vehicle</u>	<u>Value</u>
Carlisle Headquarters	1970 Dodge Pick-up	\$4,169.00
Bradley Palmer Fire	1975 Dodge Pick-up	\$3,800.00
Carlisle Headquarters	1980 Honda Civic	\$4,500.00

REGION III

<u>Area</u>	<u>Vehicle</u>	<u>Value</u>
Otter River Fire	1968 Willy's Utility Truck	\$5,748.00
Otter River	1979 Ford Sedan	\$3,066.00
Clinton Headquarters	1978 Plymouth Station Wagon	\$3,927.00
Lancaster Field Office	1977 AMC Hornet	\$3,049.00
Otter River Fire	1975 Hough Frontend Loader	\$19,818.00

REGION IV

Amherst Fire	1969 Int. Harvester Dump Truck	\$6,438.00
Goshen S.P.	1978 Dodge Jeep Truck	\$8,078.00
Erving Fire	1978 Chevy Pick-up Truck	\$4,125.00
Chicopee Fire	1977 Dodge Stake Truck	\$16,100.00
Amherst Fire	1974 Chevy Pick-up	\$4,125.00

REGION V

<u>Area</u>	<u>Vehicle</u>	<u>Value</u>
Pittsfield Hdqtrs.	1975 Caterpillar Grader	\$62,719.00

in the Division. The safety Committee objective was to formulate safety policy and safety programs for all divisional personnel and millions of the public patrons who visit our network of state parks. It is the responsibility of the Regional Safety Chairman to inspect all worksite areas, buildings, vehicles and all types of power equipment to see if they meet all the safety standards prescribed by OSHA.

Weekly reports are received by the Regional Chairman from Area Supervisors who monitor safety standards in their respective areas. If a safety hazard or a safety problem is reported, it is the responsibility of the Regional Chairman and his Regional Safety Committee to take whatever corrective action is necessary to correct the deficiency. If corrective actions can not correct the problem reports are then forwarded to the State Safety Chairman for further corrective actions.

State wide safety meetings are held at least twice a year with all safety designated committees. The Regional Safety Chairman and his committee meet once a month at different unit areas to perform safety inspections in the area.

Each fiscal year monies received through the Bureau of Recreation Retention Fund is passed on to the Regions to acquire safety equipment necessary to make our state facilities as safe a working place as possible.

In fiscal 1986 the Safety Committee focused on purchasing metal storage cabinets for flammable materials. Every large installation received at least one storage cabinet.

The success of our safety program depends on the importance of stressing safety first at all times. The hard work of the Regional Safety Committees in educating all of the Division personnel in good driving habits, proper instruction in the use of power equipment and tools and diligent safety habits has made this program the best in the Commonwealth.

FIRE INCIDENT STATISTICAL REPORTSummary by Districts
June 1986 - May 1987

District	No. Fires	Acres	Cost
1	260	523.5	\$54,410.00
2	323	151.6	\$13,232.50
3	423	314.25	\$18,058.90
4	320	588 -	\$50,002.27
5	104	108.5	\$4,954.00
6	232	191.25	\$15,560.00
7	70	76.25	\$4,941.00
8	450	179.10	\$51,077.70
9	118	57.25	\$6,236.70
10	176	165 -	\$9,448.06
11	284	288.75	\$10,532.00
12	62	45.25	\$8,064.00
14	90	248.5	\$4,314.80
otal	2,912	2,937.20	\$250,831.93

DAMAGE - \$132,493.65

Acreage by District
June 1986 May 1987

District	A	B	C	D	E	Total
1	56.75	46.75	-	120	300	523.5
2	57.85	93.75	-	-	-	151.6
3	61.25	198	55	-	-	314.25
4	61.25	141.75	25	-	360	588
5	20.50	43	45	-	-	108.5
6	33	137.25	21	-	-	191.25
7	8.25	48	20	-	-	76.25
8	57.85	121.25	-	-	-	179.10
9	22	35.25	-	-	-	57.25
10	21	104	40	-	-	165
11	30	168.75	90	-	-	288.75
12	2.25	43	-	-	-	45.25
14	11.75	74.75	162	-	-	248.5
Total	443.70	1,255.5	458	120	660	2937.20

Summary by Month
June 1986 - May 1987

Month	No. Fires	Acres	Cost
June	158	80.45	\$14,010.50
July	299	120.85	\$27,623.82
August	92	42.25	\$6,027.50
September	121	46	\$6,637.81
October	320	204	\$19,198.50
November	120	69.75	\$5,763.50
December	24	6.5	\$1,542.80
January	15	2.7	\$797.00
February	13	3.85	\$815.00
March	305	620.85	\$23,948.80
April	647	1,042.45	\$78,406.28
May	798	697.55	\$66,060.42
Total	2,912	2,937.20	\$250,831.93

June 1986 - May 1987

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June 1986 - May 1987

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Summary by Month
June 19 86 - May 19 87

Month	No. Fires	Acres	Cost
June	158	80.45	\$14,010.50
July	299	120.85	\$27,623.82
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December	24	6.5	\$1,542.80
January	15	2.7	\$797.00
Febuary	13	3.85	\$815.00
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Total	2,912	2,937.20	\$250,831.93

June 1986 - May 1987

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June 1986 - May 1987

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ANNUAL REPORT
FISCAL YEAR 1987
BUREAU OF URBAN SERVICES
Robert E. Freedman, Chief

INTRODUCTION

In its third full year of operation, the Bureau of Urban Services continues to grow and expand in its programs, services, and physical plant. The Lawrence and Gardner Heritage State Park Visitor Centers and exhibits were completed and opened to the public in late summer. Dunn Park, a component of Gardner Heritage State Park, offered supervised swimming for the first time. The Waterfront Park, part of Lynn Heritage State Park, had its first full year of operation in Fiscal Year 1987. Paddleboats were available in the park's saltwater cove, boat trips to the Harbor Islands were conducted - at almost full capacity, and approximately 60 recreation and interpretive programs were conducted by park staff. Over 25,000 thousand people came to the park during its first year.

PARK VISITATION AND PROGRAMS

The number of visitors to the Heritage State Parks in Fiscal Year 1987 was 626,491, almost 100,000 more than FY 1986. Contributing to the increase in visitors were the recreation and interpretive programs planned organized, and conducted by park staff. They conducted 978 programs during Fiscal Year 1987, an increase of approximately 300 over the previous year. The types of programs conducted cover a broad range, appealing to all tastes and interests. These include band concerts, lectures, puppet shows, parades, crafts instruction, historic exhibits, historic reenactments, ethnic festivals, etc. Also bringing more people to the Heritage Parks were numerous bus trips planned to bring urban residents to many of the rural parks managed by the Division.

Approximately 70 of these trips were conducted and almost every one was at capacity. Probably the program highlight of the year - the Armand Hammer art collection, consisting of 70 paintings and drawings of the world's most renowned artists, was exhibited at the Holyoke Heritage State Park Visitors' Center from June 14 - August 23, 1987. Approximately 90,000 people saw this famous collection of many of the world's most renowned artists. During the Fiscal Year, planning started for a scholars-in-residence program called "Shifting Gears: The Changing Meaning of Work in Massachusetts, 1920 - 1980". Cosponsored by the Massachusetts Foundation for Humanities and Public Policy, the program places a humanities scholar in several of the Heritage State Parks who will conduct scholarly research, train staff, and develop and implement a variety of public programs at the park or within the host city.

Ernest DeRosa, Urban Forester conducted a lecture series at several Heritage Parks aimed at stimulating interest and concern for our roadside shade trees.

STRATEGIES AND PROJECTS TO CONTINUALLY IMPROVE HERITAGE STATE PARK MANAGEMENT

Our policy of providing the services and resources to improve Heritage State Park Management continues. In February, 1987, Buildings and Grounds Maintenance Supervisors attended a workshop on irrigation systems; many Visitor Services staff attended the first winter session of the Interpretive Training Institute as well as the traditional session held in June every year. In the spring, every Heritage State Park conducted a reception and briefing for their area legislators to communicate the difficult budget we had to work with in Fiscal Year 1987.

The briefings were extremely successful and resulted in adoption of close to the full budget requested for the Bureau.

Another completed effort to help the parks operate more effectively and stay in tune with the leisure needs of the host city and surrounding communities, was the establishment of Park Management Advisory Committees in Holyoke, Gardner, and Lawrence. Consisting of representatives from city government, civic organizations and the general public, they have been established to be a sounding board for the park staff as well as provide oversight as to how well we manage the parks.

Providing services and support to park staff are the Horticultural and Graphic Arts Sections of the Bureau. The annual flowers and professional graphics provided by our horticulturalist and graphic artist contribute significantly to the image of our parks as places that are operated and maintained at a high standard.

The near completion of the Bureau warehouse (inside an existing building) is another example of expanding the resources available to our park staff so they can do their job effectively and efficiently. The warehouse will contain specialized maintenance tools and equipment to be issued to parks on an as-needed basis.

Finally, to keep park staff "on their toes", a second round of park evaluations were conducted by Bureau of Urban Services and Interpretive Services staff during the fall of 1986. Considerable improvement had occurred since the first series of evaluations in the summer of 1985.

DEVELOPMENT OF NEW HERITAGE STATE PARKS

Bureau staff devote a lot of time to the planning, design, and specifications of new Heritage State Parks. The following projects involved Bureau staff during FY 1987:

- o Design, specifications: Lynn Visitors' Center
- o Design: Lynn Boathouse
- o Design: Stanley Woolen Mill to Voss Farm Node, Blackstone River and Canal Heritage State Park
- o Design: Canal barge, Blackstone
- o Phase II Design: Fall River Heritage State Park
- o Schematic Design: Lawrence Riverfront Park
- o Master Plan: Long Wharf
- o Management Agreement and Schematic Design: Lower Mills Heritage State Park
- o Final Design: Dunn Pond Service Building
- o Schematic Design: Dillaway Thomas House, Roxbury Heritage State Park
- o Master Plan: Roxbury Heritage State Park
- o Conceptual Design: Turners Falls Heritage State Park

SPECIAL PROJECTS

The Bureau staff is always involved with a number of park/recreation related projects that do not have a direct connection with the management of the Heritage State Parks. Some of these were:

- o The planning of the 1986 and 1987 state parks and recreation conference
- o Advisors to the Leisure Services curriculum, Springfield College

- o Negotiator for renewal of Plimoth Plantation lease at Pilgrim Memorial State Park (berthing of Mayflower II)
- o Continued development of the Division Policy Directive Handbook
- o Creation of an Executive Development Program for resource managers, to be conducted during 1987 - 1988 by a professional training consultant.

ANNUAL REPORT

FISCAL YEAR 1987

BUREAU OF INTERPRETIVE SERVICES

ELLEN K. ROTHMAN, CHIEF

PERSONNEL

In July 1986, Andrea J. Lukens, Supervisor of Interpretive Services, left DEM to attend Yale's graduate School of Management. Karl Honkonen, Assistant Supervisor, oversaw the Bureau's activities until April 1, 1987, when Ellen K. Rothman was named Chief of Interpretive Services. A social historian by training, Rothman has had more than ten years experience in public history and interpretive programs. In the fall of 1986, Dorothy Zug became the Interpretive Coordinator for Region III. In FY 1987, the Bureau moved toward regional supervision of its seasonal staff. In May 1987, Bill Lafley, Park Interpreter at the Holyoke Notch State Park in Amherst, assumed responsibility for seasonal supervision of interpretive programs in Regions IV and V. Jon Orris, a Park Interpreter in 1986, returned to DEM as a seasonal supervisor for Region I and the Boston Harbor Islands. In FY 1987 for the first time, the Bureau shared with the Bureau of Recreation the services of a full-time graphic artist.

INTERPRETIVE PROGRAMS

Summer programs continue to be the main focus of DEM's Interpretive Services. These programs take the form of guided walks, illustrated lectures, living history, campfires, and other recreational activities. At parks that have camping areas, interpretive programs attract a large in-park audience, while day-use areas

offer programs designed primarily for the short-term visitor. Twenty-seven parks had interpreters on staff in the summer of 1986.

In addition to presenting regular programs, Park Interpreters are responsible for designing and completing park projects and festivals. In FY 87, park projects included brochures, self-guided trails, exhibits, and slideshows on natural and cultural history themes.

Festivals this summer included the second annual "Rock Day" at Pilgrim Memorial State Park, "The Buckskinners Mountain Man Rendezvous" at Wells State Park, a "Colonial Crafts" festival at Holyoke Range State Park and "Cape Cod Past, Present and Future" at Nickerson State Park.

Interpretive programs are offered in the spring and fall at several popular parks including Nickerson State Park (Brewster), Salisbury Beach State Reservation (Salisbury), Holyoke Range State Park (Amherst), Natural Bridge State Park (North Adams), and Mt. Greylock State Reservation (Lanesboro). These programs serve school groups, senior citizens, tourists, and weekend visitors.

Holyoke Range, Walden Pond, and now Maudslay State Park have year round interpretive programs. Programs at the Range focus on the flora and fauna, the history and geology, and the recreational opportunities of the Connecticut River Valley. Park staff also conduct talks at the Summit House located in nearby Skinner State Park.

At Walden Pond State Reservation in Concord, programs continue to revolve around the pond and the teachings of its often-quoted former resident Henry David Thoreau. School groups and other park visitors gather at the Thoreau cabin replica for "Thoreau Rambles," strolls around the pond which are offered every weekend.

Visitors may choose to remain after the walk and chat informally with interpretive staff. A highlight of the park's summer program are the living history programs presented by teacher/actor David Barto, who portrays Thoreau.

Maudslay State Park, Newburyport, is the newest park to have year round programming. Guided walks around the former Moseley estate feature spring blooms and fall foliage. Series on "The History of Maudslay" and "Horticulture for the Homeowner," held at the Newburyport 5¢ Savings Bank, drew over fifty people to each lecture.

JUNIOR RANGER PROGRAM

The Division's Junior Ranger program encourages youths ages 10-14 to participate in activities related to park management. By completing a series of tasks, participants earn a Junior Ranger patch and certificate. This program provides many children with a structured activity during park visits and a chance to learn firsthand about a field they may later be interested in as a career. Especially in the urban Heritage Parks, this program has allowed many children to become involved in the running of the park. Activities range from interviewing park staff to trail maintenance, from litter patrol to program publicity.

INTERPRETIVE TRAINING

The Bureau works in cooperation with the Appalachian Mountain Club (AMC), the National Park Service (NPS), and the Metropolitan District Commission (MDC) to sponsor the "Interpretive Training Institute" (ITI). Almost 200 interpreters and supervisors from these agencies attended this program June 7-10 at Cape Cod Sea Camps in Brewster.

ITI's three-track program offers innovative training for the novice and veteran interpreter alike. In Track I, beginners learn the fundamentals of interpretation and have the opportunity to be videotaped and critiqued by a group of their peers. Track II is designed for interpreters with a season or two worth of experience, and Track III offers "experts" the chance to master a new skill - in 1986, video production, marketing, or slideshow production.

An Exhibit Design Workshop held at the Commonwealth Museum in March marked the first time interpretive training was offered in the winter. This workshop brought in speakers from the museum, design, and graphic arts communities to present strategies designed to improve the quality of exhibits at all DEM sites.

INTERPRETIVE MATERIALS

New self-guided trail brochures were developed and produced for two of the Boston Harbor Islands (Gallop's and Grape) and for the Babson Farm quarry at Halibut Point State Park in Rockport. A new exhibit on Gallop's Island uses a series of aluminum panels mounted on the walls of the foundation of the pharmacist's house to tell the story of the island over three hundred years. A small exhibit on the bank restoration project at Walden Pond was installed in the headquarters building, adjacent to the newly opened bookstore. Reproduction furniture was acquired for the Thoreau house replica and carted to the house, by horse and wagon, on July 1, 1987, the 142nd anniversary of the day Henry David Thoreau moved his belongings to the Concord woods. A routed-wood panel installed next to the replica presents visitors

with passages from Walden describing the building and furnishing of the original house. In Lawrence, a two-year partnership between the Heritage State Park and the public schools culminated in a new curriculum that integrates local history into the teaching of elementary social studies.

NEW PROJECTS

GREAT BROOK FARM - In May the Division of Forests and Parks began operation of an interpretive dairy farm at Great Brook Farm State Park in Carlisle. Patricia Garland, Visitor Services Assistant at Lowell Heritage State Park, was hired to interpret the modern dairy farm being operated at the park. A grand-opening is scheduled for October 1987.

ARTS-IN-THE-PARKS

In June of 1986, sculptor Charlie Gibson joined DEM as the first artist-in-residence at Maudslay State Park and coordinator of the department's arts-in-the-parks program, established in 1986. The department has defined three goals for this new program:

1. To urge artists to create works appropriate for parks;
2. To work with the Division of Forests and Parks to expand cultural programming in the rural parks; and
3. To help DEM incorporate aesthetic materials and design in functional park components such as benches, fountains, and retaining walls.

The estate grounds and farm buildings at Maudslay made it the focus of much of the department's efforts to develop the arts-in-the-parks program. In September, an exhibition of thirty-six pieces of

sculpture on the park grounds attracted 3,000 visitors to "Art at Maudslay." In April, glass artist Jeanette Griffin set up a studio in the basement of the Ober House, and held open hours for park visitors. In May, a group of students and faculty from the Mass College of Art participated in a three-day retreat at the park. In the spring of 1987, Theresa Linniham, Director of the First Stage Theater Company of Newburyport, moved to Maudslay's Gate Lodge and began rehearsing her company for the summer season. The former Moseley estate's vegetable garden was the scene for First Stage's production of "Alice in Wonderland" on Sunday afternoons throughout the summer. Approximately 700 tickets were sold to performances of "Alice." Linniham also conducted a series of two-week theater workshops, attended by a total of ninety children.

With the arts well established at Maudslay, Charlie Gibson has been exploring other opportunities to realize the department's goals. In April 1987, Haverhill artist Joseph Daniels presented "Sacrifice: A Social Experience," an environmental sculpture event, on the beach at the Plum Island State Reservation. In May, two artists began work on the Five College Bikeway DEM is constructing in the Connecticut Valley. At Bradley Palmer State Park in Topsfield, an area of the park is being zoned for visual and performing arts.

COOPERATION WITH OTHER BUREAUS/DIVISION

One of the strongest connections in the Division of Forests and Parks is between the Bureaus of Interpretive and Urban Services.

In FY 1987, the two bureaus worked together on hiring, evaluation, supervision, and training of Heritage State Park Visitor Services staff. Statewide meetings of Visitor Services Supervisors and Assistants were held quarterly. The Chief of Interpretive Services continued to review the program planning done by the parks four times a year. The two bureaus also worked together on the "Shifting Gears Project," a collaboration between DEM and the Massachusetts Foundation for Humanities and Public Policy. Funded by the legislature in FY 1988 (as part of the Massachusetts Council on the Arts and Humanities budget), this innovative project will bring a scholar/humanist to each of three Heritage State Park in 1987-1988.

The Bureau of Interpretive Services has played an active role in several on-going Division of Planning and Development projects. Bureau staff were involved in developing Master or G.O.A.L.S. plans for Maudslay, Robinson, Moore and Great Brook Farm State Parks, and for Walden Pond State Reservation.

A P P E N D I X

ANNUAL RECREATION BUDGET

DIVISION OF FORESTS AND PARKS REVENUE

SUMMARY OF REVENUE
FORESTS AND PARKS
RINKS
POOLS
BEACHES

FACILITY ATTENDANCE

FORESTS AND PARKS
HERITAGE PARKS
RINKS
POOLS
BEACHES

CONSTRUCTION SUMMARY

BUDGET 2120-0300

FY 1987

SUBSIDIARY ACCOUNTS

DOLLARS

01	Salaries Permanent Positions	\$ 2,520,400.
02	Salaries Other	10,540,240.
03	Services Non-Employees	108,333.
04	Food for Persons	0.
05	Clothing	31,700.
06	Housekeeping Supplies & Expenses	55,000.
07	Laboratory & Medical Supplies & Expenses	70,000.
08	Heating & Plant Operation	1,800,000.
09	Farm & Grounds	150,000.
10	Travel & Automotive Expenses	220,099.
11	Advertising & Printing	30,000.
12	Maintenance - Repairs, Replacements & Alterations	800,000.
13	Special Supplies & Expenses	8,800.
*13	Unemployment Insurance Costs	200,000.
14	Office & Administrative Expenses	11,500.
15	Equipment	635,000.
16	Rentals	<u>74,300.</u>
		17,255,372.

* Expense of unemployment costs.

FY 1987 SUMMARY OF REVENUE

AREA	DAY USE	CAMPING	OTHER	TOTAL
BEACHES	507,910.25	493,495.00	51,847.77	1,053,253.02
FORESTS & PARKS	842,141.00	1,050,529.25	351,188.15	2,243,858.40
POOLS	62,544.50	-	3,390.56	65,935.06
RINKS	2,537,820.44	-	134,043.87	2,671,864.31
TOTAL	3,950,416.19	1,544,024.25	540,470.35	6,034,910.79

PARKS FY 1987

	PARKING	CAMPING	SEASON PASS	BUS	ADULT WALK-INS	HOUSE RENTS	CHILDRENS ROLL-TYPE	COTTAGE PERMITS	CONCESSION	MISC.	PIER PERMITS	GROUP	PAY- PHONE	TOTALS
AMES NOWELL	5,970		1,060						30.00	3.00			7.74	7,070.74
ASHLAND	600		220						11.90					831.90
ASHMERE LAKE		6,480	1,380	160		1,726.00		2,850	25.50	47.00			34.01	2,850.00
BEARTOWN	2,913					4,638.00								12,765.51
BORDERLAND										9,037.50				4,638.00
BOSTON HARBOR IS.												1,635		9,037.50
BRADLEY PALMER	6,414		780	20	6.50	9,571.50								18,420.50
BUFFUMVILLE	2,688		900			8,876.50			39.90	850.00			5.73	3,634.40
CARLISLE														9,732.23
CHESTER GARDNER	3,036	388.00	240		65.75									3,729.75
CHICOPEE	24,240		7,120		200.00		38.70		127.05	20.00				31,745.75
CLARKSBURG	3,729	3,805.00	2,440	140	7.25				51.00	600.00				10,772.25
COCHITUATE	70,362	252.25	20,120	560					8,299.25		2,604			102,197.50
D.A.R.	13,674	23,908.00	7,740	60					281.65	58.00				45,721.65
DEAN POND	5,274	156.00	1,500	100	2.75				25.50	995.60				8,053.85
DEMAREST LLOYD	21,372		6,220	140					27.00					27,759.00
DIGHTON ROCK	540		260	60										860.00
DOUGLAS	28,575		9,080	400					501.98	1,567.00				40,123.98
ERVING	12,450	8,165.00	8,080	80	60.50					202.00				29,037.50
FEDERATED WOMEN'S														.00
FOXBORO														.00
FREETOWN	2,364		1,230			1,820.00				3.00				5,417.00
GRANVILLE	2,667	4,090.00	280							100.00				7,137.00
HAMPTON POND	18,591		5,040	20	109.25	7,320.00			400.00					31,480.25
HAROLD PARKER	8,295	71,817.00	480	80	1.00				110.00			350.15		81,133.15
HOLLAND POND	4,254		1,120						41.90					5,415.90
HOPKINTON	73,400		24,920	460					7,001.95		85	2,080		107,946.95
LAKE DENNISON	6,891	54,300.00	2,480		14.50				106.90				6.21	63,777.90
LEOMINSTER	10,998		5,920			1,440.00				100.00				18,378.71
MARTHA'S VINEYARD						1,092.00								1,192.00
MASSASOIT	6,444	94,542.00	1,400						25.00			164.17		102,575.17
MAUDSLAY						9,016.50								9,016.50
MOHAWK	2,988	25,290.00	300			2,028.00			50.50	10.00				28,638.50
MOORE												145		2,028.00
MT. GRACE	585		80											810.00
MT. GREYLOCK	870	8,693.00								73,752.99				83,315.99
MT. WASHINGTON	719													719.00
MYLES STANDISH	27,873	142,395.00	2,000	440		3,516.00				612.50		491.06		218,042.06
NATURAL BRIDGE	10,206		60	60	138.00			36,800	3,914.50	3.00				10,467.00

PARKING	RECEIPTS	SEASON PASS	BUS	ADULT WALK-IN	HOUSE RENTS	CHILDREN'S ROLL-TYPE	COTTAGE PERMITS	CONCESSION	MISC.	PIER PERMITS	GROUP	PAY - PHONE	TOTAL
NICKERSON	258,694				900		1,320	2,225.00	5,937.10			1,676.73	270,752.83
OCTOBER MTN.	474								2.00			123.28	21,367.28
OTTER RIVER	1,809	1,240	20					63.90				25.18	20,138.08
OTIS									202.87				202.87
PITTSFIELD	9,877	380	20					25.50	255.00			2.81	16,809.31
PURGATORY CHASM								101.95					101.95
QUINSIGAMOND LAKE	3,633		80	1,804.50				701.95	2,424.50				8,643.95
REGETTA POINT	7,281	6,320	20	496.25					3.65				14,120.90
ROBINSON	9,570	2,620	20					58.05	10.35		585		12,843.40
RUTLAND	12,135	4,220	100	5.00				101.95					16,561.95
SANDSFIELD	3,723	3,120						25.50	9.00				6,879.50
SAVOY MTN.	1,458	360						76.00					19,541.00
SHAWMEE CROWELL	873				1,464			525.00	424.84			35.09	96,311.93
SKINNER	3,624	20							500.00				4,144.00
SOUTH MOUNTAIN		40											40.00
SPENCER	3,900	940			1,299			25.25					6,164.25
TOLLAND	9,663	1,420		30.25				25.50					51,478.75
TULLY	15												1,842.00
UPTON					1,464								1,464.00
WACHUSETTS MTN	2,062								101,507.00				103,569.00
WALDEN POND	141,497	45,920	60					3,605.00	1.00			165.23	191,248.23
WARREN MANNING	228	.40											268.00
WATSON POND	9,060	2,680	20	40.50					.50				11,801.00
WELLS	807			1,818.00					.25				32,242.75
STREETEER	8,865	4,997		32				25.50					13,965.95
WENDELL	2,835	2,900		10.25				25.50	350.00		240		6,360.75
WILLARD BROOK	10,833	4,300	80		1,248			183.45					28,392.45
PEARL HILL	5,700	3,080											17,648.00
WINDSOR	3,879	1,260	20	1.75				51.00					7,644.75
WOMPATUCK	630				5,191.50				2.00				100,305.50
OFFICE ACCOUNT		1,320							13,210.98				14,530.98
TOTALS=	629,785	1,050,529.25	199,627	3,200	4,844.00	62,611.00	38.70	28,989.43	212,802.63	2,689	4,685	3,087.39	2,243,858.40

TRAILERS				SEASON PASS				MISC.		TOTAL	
LAUNDROMAT	LAUNDROMAT	LAUNDROMAT	LAUNDROMAT	LAUNDROMAT	LAUNDROMAT	LAUNDROMAT	LAUNDROMAT	MISC.	MISC.	TOTAL	TOTAL
WALDEN BRÉEZES	14,490.00	621.55								15,111.55	
TOTALS=	14,490.00	621.55								15,111.55	
GROSS TOTALS										2,258,969.95	

RINKS FY 1987

	CHILDREN	ADULTS	SPECIAL EVENTS	RENTALS	WALK-INS	LOCKERS	CONCESSION	PAYPHONE	MISC.	JOGGING	TOTALS
AUBURN	5,527.50	11,402.00	705.00	130,970.00		1,105.75	5,134.00	70.93			154,915.18
BROCKTON	7,131.00	9,369.00	4,133.00	144,804.94		1,031.00	9,330.40	79.72			175,879.06
FALL RIVER	6,006.50	9,235.00	4,214.25	135,042.00		1,570.50	7,090.00	165.45			163,323.70
FRANKLIN	7,968.00	9,317.00	7,394.00	167,802.50		797.50	12,900.00	63.54	42.94		206,285.48
GARDNER	3,294.50	4,875.00	1,896.50	95,365.00		469.00	2,175.00	56.15			108,131.15
GREENFIELD	4,430.50	3,701.00	1,236.00	70,342.50		301.00	2,500.00	33.66			82,544.66
HAVERHILL	4,391.50	3,800.00	2,405.25	126,100.00		470.50	6,754.00	64.79			143,986.04
HOLYOKE	2,437.50	3,716.00	2,359.50	110,195.00		276.25	3,362.62	34.36			122,381.23
LOWELL	5,077.00	9,007.00	3,821.00	168,647.50		960.50	4,398.34	100.04			192,011.38
MARLBORO	5,056.50	9,530.00	2,964.50	130,960.00		273.00	4,084.00	83.16			152,951.16
NEW BEDFORD	3,967.50	6,740.00	10,863.50	128,750.00		832.10	7,303.00	146.31			158,602.41
NEWBURYPORT	7,035.00	7,286.00	10,463.50	147,342.50		591.60	8,001.00	58.51	34.50		180,812.61
NORTH ADAMS	1,640.00	3,489.00	2,192.00	41,046.00		178.50	2,836.50	500.00			51,882.00
PEABODY	5,620.50	7,369.00	5,513.50	154,657.50		620.00	16,408.05	58.38			190,246.93
PLYMOUTH	6,729.00	6,644.00	3,181.00	123,582.50		1,044.00	4,576.00	91.61			145,848.11
SPRINGFIELD	3,748.50	5,308.00	610.50	120,200.00		474.50	4,850.00	47.06			135,238.56
TAUNTON	3,020.00	7,787.00	4,433.00	142,647.50		835.75	7,454.53	43.53	3.35		166,224.66
WORCESTER	5,876.00	8,884.00	1,398.00	113,165.00		989.25	10,235.00	52.74			140,599.99
TOTALS	88,957.00	127,459.00	69,784.00	2,251,620.44		12,820.70	119,392.44	1,249.94	546.29	34.50	2,671,864.31

POOLS FY 1987

	<u>CHILDREN</u>	<u>ADULTS</u>	<u>PASSES GROUP</u>	<u>LOOKERS</u>	<u>PAYPHONE</u>	<u>CONCESSION</u>	<u>MISC.</u>	<u>TOTALS</u>
ACAWAM	2,275.25	1,231.00				241.55		3,747.80
ATTLEBORO	1,553.00	1,319.00				500.00		3,372.00
BROCKTON	2,985.75	1,783.00				501.00		5,269.75
CHICOPEE	1,937.50	976.50				25.50		2,939.50
CLINTON	1,619.25	750.50				159.90		2,529.65
FALL RIVER	5,270.75	763.50				100.00		6,134.25
FITCHBURG	2,350.25	738.50				201.95		3,290.70
HOLYOKE	1,373.75	514.00				302.99		2,190.74
LAWRENCE	3,103.00	956.50				253.04		4,312.54
LEOMINSTER	1,575.50	415.50				101.95		2,092.95
LOWELL	3,135.25	517.00				203.03		3,855.28
LUDLOW	2,067.00	473.50				101.60		2,642.10
MILFORD	2,416.50	962.50				304.00		3,683.00
SOUTHBURIDGE	1,781.75	701.00				86.95		2,569.70
SOUTH HADLEY	1,827.25	1,208.50				25.50		3,061.25
SPRINGFIELD	1,816.25	277.50				25.50		2,119.25
WESTFIELD	2,342.25	732.50				256.10		3,330.85
WORCESTER #1	2,974.75	1,525.50						4,500.25
WORCESTER #2	2,737.00	1,556.50						4,293.50
TOTALS	45,142.00	17,402.50				3,390.56		65,935.06

BEACHES FY 1987

	<u>PARKING</u>	<u>CAMPING</u>	<u>WALK- INS</u>	<u>SEASON PASS</u>	<u>BATH- HOUSE</u>	<u>CONCESSION</u>	<u>LOCKERS</u>	<u>PAYPHONE</u>	<u>MISC.</u>	<u>BUS</u>	<u>RETURNED REFUND CH.</u>	<u>TOTALS</u>
FT. PHOENIX	7,827			6,480		205.00						14,512.00
HORSENECK	231,075	63,397	31.25	44,520		30,139.08	12.40	110.18	84.13	520		369,889.04
SALISBURY	93,450	316,883		21,340		15,606.50		1,786.07	2,890.00	340		452,295.57
SCUSSET	75,327	113,215		9,940		275.00		464.41		380		199,601.41
SOUTH CAPE BEACH	14,700			1,980		275.00						16,955.00
TOTALS	422,379	493,495	31.25	84,260		46,500.58	12.40	2,360.66	2,974.13	1240		1,053,253.02

1987 FISCAL YEAR
ATTENDANCE RECORD

AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
AMES NOWELL	-	19,942	13,872	6,070	19,942
ASHLAND	-	41,172	40,340	832	41,172
BEARTOWN	3,297	42,222	41,925	3,297	48,519
BLACKSTONE	-	-	-	-	-
BORDERLAND	-	78,671	78,671	-	78,671
BOSTON HARBOR ISLANDS	-	26,844	26,844	-	26,844
°Commuter Parking	-	262,162	262,162	-	262,162
BRADLEY PALMER	2,088	67,911	60,918	6,993	69,999
BUFFUMVILLE	-	20,517	18,001	2,516	20,517
CALLAHAN, RAYMOND J.	-	14,297	14,297	-	14,297
CAMPBELL FALLS	-	2,278	2,278	-	2,278
CAPE COD RAIL TRAIL	-	111,480	111,480	-	111,480
CATAMOUNT	-	-	-	-	-
CHESTER - BLANFORD	364	4,219	4,219	364	4,583
CHICOPEE	-	65,505	29,310	36,195	65,505
CLARKSBURG	1,202	8,874	3,369	5,505	10,076
COCHITUATE	-	118,030	41,484	76,546	118,030
CONNECTICUT RIVER RAMP	-	-	-	-	-
CONWAY	-	-	-	-	-
COOKSON	-	2,871	2,871	-	2,871
D.A.R.	17,648	35,736	18,986	16,750	53,384
DEAN POND BRIMFIELD	764	14,314	7,373	6,941	15,078
DEMAREST LLOYD	-	46,821	11,220	35,601	46,821
DENNISON LAKE	39,501	84,327	72,461	11,866	123,828
DIGHTON ROCK	-	12,847	10,069	2,778	12,847

°not included in total figures - information only

AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
DOUGLAS	-	86,858	50,345	36,513	86,858
DUBUQUE	-	25,005	25,005	-	25,005
EAST MOUNTAIN	-	-	-	-	-
ERVING	5,415	66,962	53,415	13,547	72,377
FED. WOMENS CLUB	2,129	16,063	16,063	-	18,192
F.G. HILLS	-	3,856	3,856	-	3,856
FREETOWN	-	28,540	20,648	7,892	28,540
GARDNER	-	9,265	4,860	4,405	9,265
GEORGETOWN-ROWLEY	-	-	-	-	-
GRANVILLE	6,149	10,274	6,137	4,137	16,423
GREAT BROOK FARM-CARLISLE	-	32,193	32,193	-	32,193
HALIBUT POINT	-	65,273	65,273	-	65,273
HAMPTON PONDS	-	42,050	17,045	25,005	42,050
HAROLD PARKER	32,013	57,039	44,824	12,215	89,052
HAWK'S NEST	-	-	-	-	-
H.O. COOK	-	-	-	-	-
HOLLAND POND	337	26,202	20,315	5,887	26,539
HOLYOKE RANGE	-	71,175	71,175	-	71,175
HOPKINTON	-	163,014	75,542	87,472	163,014
LEOMINSTER	-	52,515	27,663	24,852	52,515
LOWELL-DRACUT	-	32,685	32,685	-	32,685
LUDLOW	-	-	-	-	-
MARTHA'S VINEYARD	-	49,525	49,525	-	49,525
MASSASOIT	31,563	25,204	19,901	5,303	56,767
MOHAWK TRAIL	12,039	15,814	12,675	3,139	27,853

AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
MONROE	-	-	-	-	
MOORE	-	29,716	29,716	-	29,716
MT. EVERETT	-	34,883	34,883	-	34,883
MT. GRACE	-	15,062	14,218	844	15,062
MT. GREYLOCK	5,506	91,850	91,073	777	97,356
MT. SUGARLOAF	-	95,233	95,233	-	95,233
MT. WASHINGTON	822	68,772	68,772	-	69,594
MYLES STANDISH	91,777	608,724	570,734	37,990	700,501
NANTUCKET	-	-	-	-	-
NATURAL BRIDGE	-	12,964	1,077	11,887	12,964
NICKERSON	115,266	50,985	50,985	-	166,251
NORTHFIELD	-	-	-	-	-
OCTOBER MT.	8,298	48,926	48,250	676	57,224
OTIS	-	-	-	-	-
OTTER RIVER	15,188	49,050	45,791	3,259	64,238
PEARL HILL	3,587	20,322	9,178	11,144	23,909
PERU	-	-	-	-	-
PETERSHAM	-	-	-	-	-
PITTSFIELD	6,715	56,037	48,931	7,106	62,752
PLUM ISLAND	-	51,162	51,162	-	51,162
PURGATORY CHASM	-	74,968	74,968	-	74,968
QUINSIGAMOND-REGATTA	-	283,377	273,569	9,808	283,377
QUINSIGAMOND-LAKE PARK	-	116,939	106,820	10,119	116,939
RED BRIDGE	-	-	-	-	-
RICH, J. HARRY	-	-	-	-	-
ROBINSON	-	18,604	7,833	10,771	18,604

AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
RUTLAND	-	39,592	35,153	14,439	49,592
SANDISFIELD	-	14,388	8,368	6,020	14,388
SAVOY	8,697	9,309	8,041	1,268	18,006
SHAWME-CROWELL	51,929	9,203	8,159	1,044	61,132
SKINNER	-	106,594	106,594	-	106,594
SOUTH RIVER	-	-	-	-	-
SPENCER	-	17,780	10,958	6,822	17,780
STANDISH MONUMENT	-	16,942	16,942	-	16,942
STREETER	-	66,765	41,446	25,319	66,765
TACONIC FALLS	-	-	-	-	-
TOLLAND	25,471	49,266	38,757	10,509	74,737
TULLY RECREATION AREA	2,266	14,723	14,669	54	16,989
UPTON	-	12,345	12,345	-	12,345
WACHUSETT MOUNTAIN	-	282,135	282,135	-	282,135
* - SKI AREA	-	379,199	379,199	-	379,199
WAHCONAH FALLS	-	21,220	21,220	-	21,220
WALDEN POND	-	314,285	178,454	135,831	314,285
WARREN MANNING	-	1,105	802	303	1,105
WARWICK	-	-	-	-	-
WATSON	-	28,066	13,679	14,387	28,066
WEBB	-	91,141	91,141	-	91,141
WELLS	18,467	20,335	19,488	847	38,802
WENDELL	1,550	25,114	14,569	10,545	26,664
WEST LAKE	-	2,443	2,443	-	2,443
WHITEHALL	-	29,438	29,438	-	29,438

* Privately operated

AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
WILLARD BROOK	4,337	38,064	14,227	23,837	42,401
WILLOWDALE	-	30,265	30,265	-	30,265
WINDSOR	1,726	8,343	3,705	4,638	10,069
WOMPATUCK	41,650	328,375	328,375	-	370,025
TOTAL	557,761	5,657,561	4,855,060	802,501	6,215,322

HERITAGE PARKS	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
FALL RIVER	-	152,338	152,339	-	152,339
HOLYOKE	-	56,906	56,906	-	56,906
LAWRENCE	-	69,513	69,513	-	69,513
LOWELL	-	533,761	533,761	-	533,761
NORTH ADAMS	-	48,881	48,881	-	48,881
GARDNER	-	20,497	20,497	-	20,497
TOTAL	-	881,896	881,896	-	881,896

SWIMMING POOLS	DAY-USE	TOTAL
AGAWAM	14,425	14,425
ATTLEBORO	15,363	15,363
BROCKTON	20,339	20,339
CHICOPEE	13,482	13,482
CLINTON	25,496	25,496
FALL RIVER	28,135	28,135
FITCHBURG	19,570	19,570
HOLYOKE	9,170	9,170
LAWRENCE	20,055	20,055
LEOMINSTER	13,473	13,473
LOWELL	14,490	14,490
LUDLOW	13,697	13,697
MILFORD	14,313	14,313
SOUTHBRIDGE	8,845	8,845
SOUTH HADLEY	13,697	13,697
SPRINGFIELD	8,291	8,291
WESTFIELD	13,366	13,366
WORCESTER #1 (SHINE)	27,618	27,618
WORCESTER #2	30,875	30,875
TOTAL	324,700	324,700

SKATING RINKS	DAY-USE	TOTAL
AUBURN	203,074	203,074
BROCKTON	101,160	101,160
FALL RIVER	142,273	142,273
FRANKLIN	183,662	183,662
GARDNER VETERANS	130,167	130,167
GREENFIELD	90,009	90,009
HAVERHILL	78,189	78,189
HOLYOKE	133,672	133,672
LOWELL	151,336	151,336
MARLBORO	211,152	211,152
NEW BEDFORD	145,698	145,698
NEWBURYPORT	156,584	156,584
NORTH ADAMS	19,201	19,201
PEABODY	108,504	108,504
PLYMOUTH	119,955	119,955
SPRINGFIELD	121,027	121,027
TAUNTON	84,132	84,132
WORCESTER	178,518	178,518
TOTAL	2,358,313	2,358,313

BEACH AREAS	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
FT. PHOENIX	-	48,747	38,556	10,191	48,747
HORSENECK	29,672	407,971	114,933	293,038	437,643
SALISBURY	199,744	1,550,057	1,407,387	142,670	1,749,801
SCUSSET	42,873	141,860	64,624	77,236	184,733
SOUTH CAPE	900	37,715	22,889	14,826	38,615
TOTAL	273,189	2,186,350	1,648,389	537,961	2,459,539

	CAMPING	DAY-USE	TOTAL
Total Attendance At All Facilities	830,950	11,408,820	12,239,770

SUMMARY

DIVISION OF PLANNING & DEVELOPMENT - FISCAL YEAR - 1987

CONSTRUCTION AND 03 CONSULTANT CONTRACTS

<u>TITLE OF EACH CATEGORY</u>	<u>NUMBER OF CONTRACTS OF EACH CATEGORY</u>	<u>TOTAL DOLLAR VALUE OF EACH CATEGORY</u>
Appraisal	25	113,367
Title Exam	20	44,008
Design, Studies and Exhibit Design	27	3,716,058
Surveys	4	23,481
Construction	17	2,314,751
Other 03 Dependent & Independent Consultants	78	3,127,069
<u>TOTALS</u>	<u>CONTRACTS 171</u>	<u>TOTAL COST \$9,338,734</u>

<u>NUMBER OF PARCELS</u>	<u>LAND ACQUISITION</u>	<u>TOTAL COST OF PARCELS</u>
40	<u>AMOUNT OF ACREAGE</u>	
	945	\$11,832,793
		<u>GRAND TOTAL</u>
		\$21,171,527

CONSTRUCTION

FISCAL YEAR 1987

REGION	FOREST/PARK RESERVATION	CONTRACT NUMBER	GENERAL CONTRACTOR	CONTRACT AMOUNT	SCOPE OF WORK
I	Fort Phoenix	313-87	Lawrence Lynch Corp.	234,501	Phase II Site improvements.
I	Horseneck Beach	272-85	Galego Roofing	73,188	Roof repairs
I	Martha's Vineyard Wompatuck		Various	20,000	Curbing, pavement painting
I	Myles Standish Fire Tower	220-86	A.P. Whitaker	239,200	Construction of a Fire and Observation Tower
I	Plymouth Rock	239-85	R.J. Delmonico	164,172	Pier improvements.
I	Standish Monument	273-85	Bay State Contracting	457,060	Monument Restoration
II	Great Brook Farm S.P.	341-87	Professional Roofing	6,875	Keay Bain roof replacement
II	Salisbury Beach	284-86	P. Caliacco Corp.	170,393	Electrical repair
II	Salisbury Beach	330-87	Robert Pike	4,700	Entrance improvements
II	Salisbury Beach	329-87	Expert Fence	4,620	Pavilion rehabilitation
II	Walden Pond	329-89	C.C.M. Corp.	112,930	Phase II Bank restoration
II	Walden Pond	293-86	Sciala Construction	292,212	Bank restoration
II	Blackstone Heritage S.P.	306-86	Areello Inc.	163,794	Construction Caplon Park
II	Erving S.F.	304-86	B & M Construction	63,360	Beach expansion
II	Lake Shirley	383-87	Sutton Corp.	87,750	Emergency dam repairs
IV	Forest & Parks	336-87	Ken-Coal	63,045	Gate installation

CONSTRUCTION

FISCAL YEAR 1987

REGION	FOREST/PARK RESERVATION	CONTRACT NUMBER	DESIGN CONSULTANT	CONTRACT AMOUNT	SCOPE OF WORK
I	Ames Nowell Pond Dam	351-87	Gannett, Fleming, Coddry & Carpenter, Inc.	45,000	Study, evaluation and conceptual design.
	Fall River Heritage State Park	322-89	Keyes Associates	16,600	Redesign pedestrian plaza
	Massasoit State Park	87-043	City Design Collaborative	230,168	Design of site improvements
I	Greswold Pond Dam	361-87	SEA Consultants	65,000	Final Design
	Lawrence Heritage State Park	307-86	Waller, Kluesing Design Group	66,500	Final design Pemberton Park
	Lawrence Heritage State Park	318-87	Boston Museum Design Group	150,000	Exhibit Design
	Lawrence Outdoor Pond	Q85-1	MACE Engineering	25,000	Building study
II	Merrimack Riverfront Park	89-209	Camp, Dresser & McKee, Inc.	89,214	Environmental Impact Report
	Salisbury Beach State Reservation	Q85-10	City Design Collaborative	10,000	Building study -
II	Blackstone Heritage State Park	289-86	Urban Design Group, Inc.	146,026	Schematic Design -Phase II
	Blackstone Heritage State Park		Raymond, Parish, Pine & Weiner, Inc.	130,000	Technical feasibility study & implementation strategy- Worcester component.
	Fitchburg Pool	285-16	Johannes Wagner Assoc.	30,000	Building study
V	Ashfield Lake Dam	345-89	Goldberg, Zoino Corp.	89,600	Redesign of dam
	Brimfield & Wendall State Forest	Q85-16	Johannes Wagner Assoc.	24,000	Building study

CONSTRUCTION

FISCAL YEAR 1987

REGION	FOREST/PARK RESERVATION	CONTRACT NUMBER	DESIGN CONSULTANT	CONTRACT AMOUNT	SCOPE OF WORK
IV	Erving State Forest	Q85-16	Johannes Wagner	18,000	Building study
IV	Holyoke Heritage State Park	291-86	Berkshire Design	68,000	Final design Childrens Museum
V	Greylock Glen	378-87	Stone & Webster	193,000	Phase II Environmental Impact Report
V	Greylock Glen	337-87	R.K. Gottschneider	39,950	Greylock Glen Development Plan
	Heritage State Parks	87-038	Blanket Authorization	400,000	Exhibit Design
	DEM Dams	353-87	O'Brien & Gere, Inc.	270,000	DEM owned dam inspections
	DEM Dams	354-87	Geotechnical Engineers, Inc.	250,000	DEM owned dam inspections
	Municipal Dams	358-87	Hydraulic & Water Resources	226,000	Municipal dam inspections
	Municipal Dams	360-87	Keyes Associates	230,000	Municipal dam inspections
	Municipal Dams	359-87	A.G. Lichtenstien	226,000	Municipal dam inspections
	Municipal Dams	357-87	Cleverdon, Verney & Pike, Inc.	226,000	Municipal dam inspections
	Municipal Dams	355-87	Camp, Dresser & McKee, Inc.	226,000	Municipal dam inspections
	Municipal Dams	356-87	Lee Pare Assoc.	226,000	Municipal dam inspections

ACQUISITION

FISCAL YEAR 1987

Land Acquisition - 7/1/86 - 6/30/87

LOCATION	AREA	GRANTOR	DATE RECORDED	ACREAGE	COST
Douglas	Douglas S.F.	Rudolph & Lois Bergstrom	7/9/86	10,500 S.F.	\$ 18,375.
Douglas	Douglas S.F.	Arthur & Debra Brotherton	7/9/86	10,200 S.F.	15,800.
Douglas	Douglas S.F.	Royal & Mildred Cooper	7/9/86	4,725 S.F.	7,325.
Douglas	Douglas S.F.	Laura & Alice Morrisette	7/9/86	10,600 S.F.	16,430.
Douglas	Douglas S.F.	Ralph & Mary Thompson	7/9/86	4,850 S.F.	9,000.
Douglas	Douglas S.F.	Henry & Irene Wells	7/9/86	5,000 S.F.	10,000.
Newburyport	Maudslay S.P.	Trust for Public Land	7/16/86	2.98A	144,000.
Newburyport	Maudslay S.P.	Trust for Public Land	7/16/86	2.98A	190,000.
Sutton	Sutton S.F.	Robert & June Beauregard	8/21/86	8.75A	5,750.
Sutton	Sutton S.F.	Evelyn F. Smith Trustee	8/21/86	3.A	15,000.
Douglas	Douglas S.F.	Woodrow & Ann Wilson	8/21/86	7,950 S.F.	15,200.
Douglas	Douglas S.F.	Curtis & Mildred Weir	8/21/86	4,750 S.F.	8,930.
Lowell	Lowell Heritage S.P.	City of Lowell	10/1/86	Easement	---
Framingham, Southboro, and Marlboro	Bay Circuit Greenbelt	Allen M. Glick	10/29/86	163 A	6,000.
Brewster	Brewster S.P.	Ann Sears Whiteman	11/24/86	19A	550,000.
South Hadley	Holyoke Range	Francis E. DeWitt	11/25/86	88A	39,000.
Lowell	Lowell Heritage S.P.	Prop. Locks & Canals	12/15/86	25A	1,275,000.
Townsend	Squannacook River	Bradford & Louise Eisner	12/18/86	21A	60,000.

ACQUISITION

FISCAL YEAR 1987

Land Acquisition - 7/1/86 to 6/30/87

LOCATION	AREA	GRANTOR	DATE RECORDED	ACREAGE	COST
Brewster	Nickerson S.P.	Herbert & Margaret Schader	12/22/86	3,550 S.F.	\$ 25,000.
Brewster	Nickerson S.P.	Harry A. Anderson	12/22/86	- -	25,000.
Brewster	Nickerson S.P.	Robert & Ethel Holm	12/22/86	- -	25,000.
Brewster	Nickerson S.P.	Franklin & Winifred Spencer	12/22/86	- -	25,000.
Brewster	Nickerson S.P.	Kenneth & Helen Graham	12/22/86	1,024 S.F.	2,000.
Templeton	Otter S.F.	George & Roselyn Brackett	12/23/86	46A	16,600.
Douglas	Douglas S.F.	Donald & Lind McGregor	12/23/86	10,250 S.F.	13,750.
Douglas	Douglas S.F.	William J. Wallis	12/23/86	120.7 A	910,000.
Sharon	Borderland S.P.	Webster Miliar Rice	12/23/86	16 A	100,000.
Brewster	Nickerson S.P.	Leo F. Gallagher	12/26/86	31.A	180,000.
Paxton	Moore S.P.	Olive A. Jenkins	12/29/86	76.A	345,383.
Hadley	Holyoke Range	Edwin Yarrow	12/30/86	4.6A	13,500.
Douglas	Douglas S.F.	Veronica Tetreault	12/30/86	45.A	36,000.
Brewster	Nickerson S.P.	John G. Sully Et Al	12/30/86	28,000 S.F.	360,000.
Hopkinton	Whitehall Res.	Commonwealth of Mass.	1/13/87	- -	Easement
Wendell	Wendell S.F.	Walter C. Jones	2/5/87	79.A	63,000.
North Andover	Boxford S.F.	Republic Dev. Corp.	2/26/87	19.A	150,000.
Great Barrington	East Mountain S.F.	Commonwealth of Mass.	1/16/87	(375A)	Lease

ACQUISITION

FISCAL YEAR 1987

Land Acquisition - 7/1/86 to 6/30/87

LOCATION	AREA	GRANTOR	DATE RECORDED	ACREAGE	COST
Lanesborough	Mt. Greylock S.R.	Russell & Martha Freedman	3/12/87	69.A	\$ 60,000.
Uxbridge	Blackstone River Heritage S.P.	Depot Street Associates	4/16/87	21,300 S.F.	Gift
Brewster	Nickerson S.P.	Malcolm J. Graham	5/6/87	21,720 S.F.	305,000.
North Andover	Boxford S.P.	Charles H. Chaplin Trust	5/15/87	31.A	116,250.
Truro	High Head	Nature Conservancy (Thomas A. DeWire Lot)	5/19/87	1.06A	200,000.
Chesterfield	Chesterfield Gorge	Frederick W. Chick Et Ux	6/1/87	70.285A	42,500.
Brewster	Nickerson S.P.	John & Patricia Sully	6/3/87	26,600 S.F.	439,000.

